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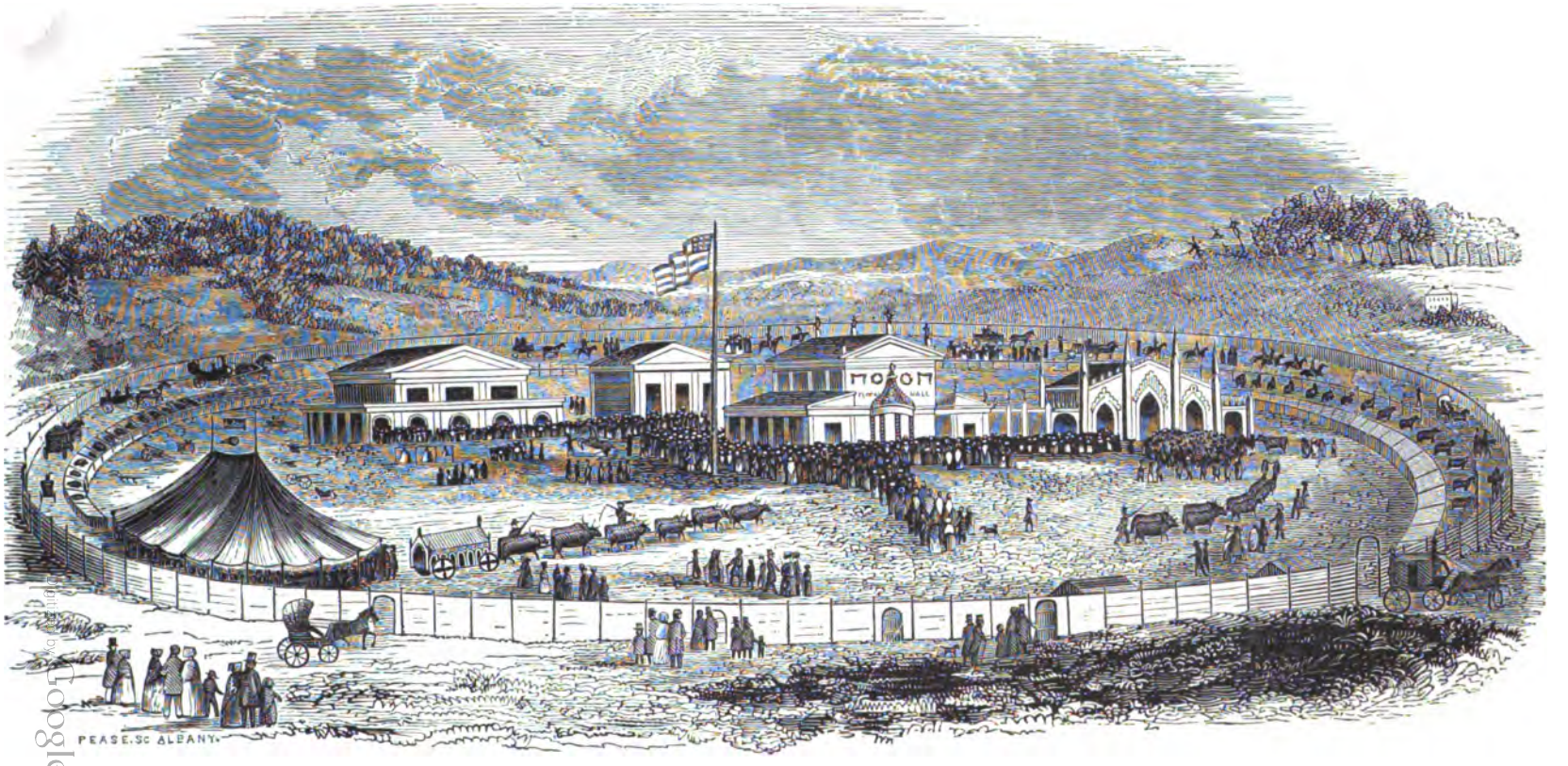

View of the Show Grounds at Auburn, 1846.

THE THOROUGH-BRED DURHAM COW LADY BARRINGTON THIRD.

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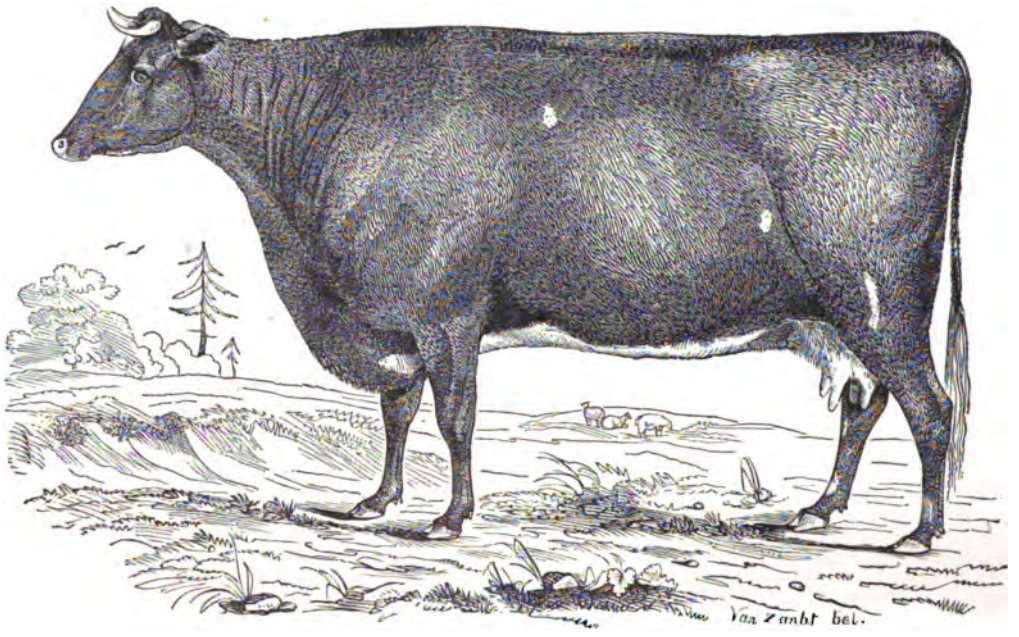

THE THOROUGH BRED DURHAM COW, LADY BARRINGTON THIRD.

This fine animal is owned by GEORGE VAIL, of Troy, and by him imported from the celebrated herd of THOMAS BATES, Esq., Yorkshire, England. The first premium was awarded her at the N. Y. State Ag. Society's Show at Auburn, September, 1846, and also at the Rensselaer County Show the same month.

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TRANSACTIONS

OF THE

NEW-YORK

STATE AGRICULTURAL SOCIETY,

WITH AN

ABSTRACT OF THE PROCEEDINGS

OF THE

COUNTY AGRICULTURAL SOCIETIES;

AND OF THE

AMERICAN INSTITUTE.

VOL. VI — 1846.

ALBANY:
C. VAN BENTHUYSEN AND CO., PUBLIC PRINTERS.
.....
1847.

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NOTICE.

The Transactions have been delayed by circumstances, over which the subscriber, to whom was entrusted their preparation, had no control. A large portion of the matter was procured after he entered upon the duties of his office in January last. A very extensive correspondence was rendered necessary, with the officers of county societies, which has resulted in securing returns from every society in the State. He trusts this will be a sufficient apology for the delay which has attended the transmission of the Transactions to the Legislature, and for any deficiencies in the preparation.

To the gentlemen who have furnished communications for the volume, the Society feel under very great obligations, adding, as they do, much very valuable and interesting matter. To the kindness of Mr. A. J. Downing, Newburgh; Mr. Tucker of the Cultivator; Mr. Allen of the Agriculturist; Messrs. Emmons and Osborn of the Journal of Agriculture, and Mr. D. J. Browne, New-York, the Society is indebted for the use of many of the cuts illustrating the Transactions.

B. P. JOHNSON.

Agricultural Rooms,
Albany, April 9th, 1847.

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OFFICERS FOR 1847.

PRESIDENT,

GEORGE VAIL, Troy.

VICE PRESIDENTS,

WM. T. McCOUN, New-York,
JOHN A. KING, Jamaica,
C. N. BEMENT, Albany,
SAMUEL CHEEVER, Bemis' Heights,
O. C. CHAMBERLAIN, Richfield Springs,
E. C. FROST, Catherine,
H. S. RANDALL, Cortlandville,
WM. BUEL, Rochester.

RECORDING SECRETARY,

B. P. JOHNSON, Rome.

CORRESPONDING SECRETARY,

JOEL B. NOTT, Albany.

TREASURER,

J. McD. McINTYRE, Albany.

EXECUTIVE COMMITTEE,

T. J. MARVIN, Saratoga Springs,
W. A. BEACH, Saratoga Springs,
J. T. BLANCHARD, Saratoga Springs,
G. V. SACKETT, Seneca Falls,
A. STEVENS, New-York.

EX-PRESIDENTS, MEMBERS OF EXECUTIVE COMMITTEE,

FRANCIS ROTCH, Butternuts,
A. VAN BERGEN, Coxsackie,
JOEL B. NOTT, Albany,
JAMES S. WADSWORTH, Geneseo,
JOHN P. BEEKMAN, Kinderhook,
B. P. JOHNSON, Rome,
J. M. SHERWOOD, Auburn.

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LIFE MEMBERS BY THE PAYMENT OF FIFTY DOLLARS OR MORE.

J. P. BEEKMAN, Kinderhook, $100.
WM. BUEL, Rochester.
ERASTUS CORNING, Albany, $60.
HENRY W. DELAVAN,* Ballston.
JOSEPH FELLOWS, Geneva, $150.
JOHN GREIG, Canandaigua.
JAMES LENOX, New-York, $450.
J. LE RAY DE CHAUMONT,* Jefferson Co.
EDWARD P. LIVINGSTON,* Clermont.
ARCHIBALD McINTYRE, Albany.
J. McDONALD McINTYRE, Albany.
E. P. PRENTICE, Mt. Hope.
FRANCIS ROTCH, Butternuts.
P. N. RUST, Syracuse.
WM. H. SEWARD, Auburn.
JOHN M. SHERWOOD, Auburn.
JOHN TOWNSEND, Albany, $100.
LUTHER TUCKER, Albany.
STEPHEN VAN RENSSELAER,* Albany.
STEPHEN VAN RENSSELAER, Albany.
WM. P. VAN RENSSELAER, Beaverwick.
JAMES WADSWORTH,* Geneseo, $100.
JAMES S. WADSWORTH, Geneseo, $200.
WM. W. WADSWORTH, Geneseo, $75.

* Deceased.

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REPORT OF THE COMMITTEE OF THE ASSEMBLY ON AGRICULTURE.

Mr. Beckwith, from the committee on agriculture, to which was referred the memorial of the farmer's club of the American Institute, and other citizens, praying for an appropriation to aid in the purchase of an experimental farm and the establishment of an agricultural college near the city of New-York, to be placed under the care of the American Institute, reports,

That they are sensible of the high source from which the petitions came, especially the character of that institution in which they seem to have originated.

Your committee are aware that the establishment of an agricultural college and experimental farm has been often talked of, and we suppose may be consonant to the views of many distinguished individuals, and may have become a favorite scheme with a respectable class of farmers in the State. But we have not before us any petitions, except from those living in or near the city of New-York, as your committee believe. It is reasonable to suppose that if the farmers living in different parts of the State had been favorably impressed with the views entertained by the petitioners, we should have had petitions from them on the subject.

Your committee having come to the conclusion that the prayer of the petitioners ought not to be granted, proceed to notice some of the reasons.

1. In regard to location: An agricultural college, if it is to be aided by the funds of the people of the whole State, should not be located in the immediate vicinity of a large city, for the reason that the farmers of the country would not like to send their sons there to be educated, for fear they would imbibe the manners, customs, habits and extravagances which usually prevail at or near a large city. It would seem to your committee more reasonable, that men living in or near the city should send their sons, whom they wished to make farmers of, to an institution located in the country, where farming was the main business of the vicinity.

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2. New-York is situated at an extreme part of the State. Its soil and climate differ somewhat from a large portion of the State, where farming constitutes the main business. This, though it might not be regarded so objectionable by many as ourselves, still we believe this objection strictly tenable. Few indeed, if any, will be found among the farmers of the State, who would hesitate to give preference to a central or western location. It is there that agriculture in all its leading branches assumes its proper importance, and where it is pursued in all its branches with vigor and success; and where its example would tell most effectually upon the character of the pupil and scholar.

3. Another objectionable feature in the petition is, the call for the funds of the State in the first instance, and previous to the existence of any effort on the part of the petitioners to procure the means for the establishment from other sources. On this head we remark, that it has never been the policy of the State to grant its aid under these circumstances; and hence the committee could not but feel that the State would still adhere to this rule, which, as individuals, we feel would be a wise and proper course.

4. Such is the character of the proposed location, that it partakes too much of a local and special nature. It should be the settled policy of the State, that when large endowments are made, that their distributions and benefits should be as general as possible. The Normal school is an instance which illustrates this principle. It sends its pupils to every corner of the State, and promotes in all parts of it improvements in teaching and in the management of common schools; besides this, it is directed, that the scholars of this institution may be received from all parts of the State. In the distribution of the fund to academies the same principle is adopted, and is one of the best features in the system for distributing the public money for educational purposes.

Recognizing, then, the principle which has been settled in the legislation of the State, viz., that in the distribution of its funds their benefits should go to the many rather than the few, your committee recommend a different plan, so as to effect a far wider influence and go further towards reaching the entire population of the State than the plan proposed by the petitioners, while at the same time it preserves the principle we have alluded to. It may be true, and undoubtedly is, that in a well endowed institution, a few men

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thoroughly educated in all that appertains to agricultural science will be raised up—men if you please, who will be well qualified to teach correct principles of husbandry—still, will the high and finished education of the few compensate for the want of a good education of the many; do not the interests of society and the permanence of our free institutions depend more upon the general diffusion of knowledge and intelligence, rather than upon an education of high character, and limited in a great degree to the circle of the opulent?

The plan alluded to is to encourage the study of agriculture in the Normal school, and in the academies and local institutions which are already established and endowed in all parts of the State; we would also encourage its study in our best common schools. It is here that the elements of agriculture might be laid; for its foundation may be regarded as being based upon a knowledge of the elements of bodies. Scholars, we believe, of the age of ten or twelve years may begin to learn with profit, the properties of things, or to study the essential characteristics of the common forms of matter embracing as far as possible the varied forms which occur in the great field of nature. The advantages of beginning thus early are to create habits of observation and to strengthen the power of discrimination. It would serve to produce this general power or ability to distinguish things, to see their common characteristics, to learn what is essential and what is accidental. While this part of an education may be regarded as peculiarly necessary to the farmer, it is certainly no less so to the citizen as a member of society. These principles lie at the foundation of all correct experiments in agriculture, inasmuch as the correct knowledge of characters and phenomena enable the experimentalist to distinguish the true from the false, the accidental from the essential.

Lads who have gone thus far may be said to have fairly commenced the study of agriculture, though they are still in the common school. With this knowledge they may go up to the academy in advance. It is to these institutions that most of our young men may resort—that is, they are not shut out for want of means; and we believe that many more would attend our academies were it known that agriculture with its collateral studies constituted a prominent course of education. This we are aware would be a new feature in them. We are about to make a remark which we pre-

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sume will not be considered orthodox by those who stand in the ranks of the literati of our country, viz., that the study of Latin and Greek is a bar to the general education of farmers' sons; we allude to those who design to pursue farming for a living. If this is true, and we have no doubt of it, we may readily imagine what the result might be, if instead of the undue encouragement of the study of the dead languages, agriculture and its collateral branches were encouraged. We should, no doubt, see the academies filled with students; where one is educated, five, or perhaps ten, would be, under the new plan. And why should not such a change be made? The farmer's son may be educated with a good agricultural education, and all that is necessary as a citizen, without spending time to study the dead languages. If the mind is applied to the investigation of any subject it becomes disciplined. Close and intense reflection upon the phenomena of nature unshackled, would be much better than the study of these languages. We quote Professor Johnston; by his opinion we feel sustained. He thinks—

"It is quite certain that the course of education pursued at most "colleges and universities, is quite unsuited to qualify men for the "common business and pursuits of life. Indeed, it would seem in "many cases to operate as a positive disqualification; and men who "may have distinguished themselves at our universities for their "classical and scholastic attainments, are often thrown upon society "as helpless and as incompetent to provide for themselves, or to "serve the community, as children."

But again, our plan for educating farmers' sons is simple, and we believe feasible, and we think too, will prove effective. Let then, their education in agriculture begin in its elements in the common school. At the proper age let them go up to the academies, and there pursue, in conjunction with agriculture, algebra, mensuration, geometry, natural philosophy, physiology of vegetables and animals, geology and chemistry, and political economy. These may be pursued in several successive winters, depending much upon circumstances. The summers may be spent upon the farm at home, and under the care of the father or some experienced farmer, where the scholar may put in practice those principles of agricultural chemistry which he has been taught. If the mind has been properly awakened at the academy, those alternate periods of study and

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application of principles and of work, will go together, and will become the most effective way to the improvement of the individual. But the individual will not be benefitted only; the family and the neighboring families must also partake more or less of the benefits of the plan. The principles of agriculture must be spread widely and so must its improvement and discoveries, which beginning as it were, at a point, will extend outwards like the radii of a circle.

The school and the farm become by this plan mutual aids. The principles are acquired in the school, and the scholar becomes ambitious to test them in the field; from which it would follow, that the whole State, with its different soils and climate, becomes one great experimental farm, every intelligent farmer an intelligent experimentalist, every farm a model farm, and every farmer's son a teacher or at least an earnest learner. Such a state of things become in themselves *creative;* not merely sustaining such as would advance the outpost of our knowledge step by step into the present uncertain and unknown. The collision of minds, when put in working order invariably results in progress—possibly it would result in an overthrow of present doctrines; still it would be progress, and this is what we wish to effect, when the aid of the State is given for the promotion of a science, not merely to give a living to a few, but to give an impulse to the progress of knowledge in the many, and that a wide dissemination of truth be promoted; and it is for this reason that we propose rather the planting of many standards of education than a few, that many may be elevated and enlightened, rather than a single band whose influence would be confined to a limited sphere.

It may, and doubtless will, be thought by some, that your committee are too sanguine in their expectations of the success of their plan for the great diffusion of agricultural knowledge, through the influence of the smaller incorporated institutions of the State. But it is proper to bear in mind that there is a moving spirit abroad on the subject of reform and improvement, and that this spirit only requires a proper direction, and that its action only requires to be guided into the true and proper channels; into the channels which will act directly upon the people. Many will undoubtedly attempt to guide and control this spirit for the purposes of private gain; or perhaps even with a desire to co-operate in the general advancement

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of truth, still, if guided into channels poorly adapted to the great ends of general knowledge, it would terminate in abortive attempts to reach an end not attainable in the route pursued. Again, if it is desirable that institutions of a higher grade should be established, our plan furnishes the important *materiel* to ensure its success. The cultivated mind of the many being prepared in the minor ones already in operation, they will be ready to appreciate and sustain a high and well organized one, where all the means can be furnished for imparting the higher and more theoretical views which are entertained by the learned in Europe and in this country.

But again, we are not left in doubt in regard to the practicability of giving an agricultural education in our common schools and academies; this matter has already been decided, by the success which has followed its introduction into the common schools of Ireland and Scotland. This is matter of history, and has become so generally known, that it is unnecessary to do more than allude to it here; and we cite these instances of success, rather to show that there is no difficulty in the practical working of schools with agriculture, and the collateral branches pursued in connection with the other branches as usually taught. This plan of instruction too, will appear still more appropriate, if we only consider how it would be now looked upon, if the higher institutions of learning and science were to precede the primary ones; for in all cases, we begin as it were, by common consent, to implant primary schools first. The natural order of things is pursued, and we go up step by step; and we make the grade of ascent so easy, that the rise is overcome by littles. We say, then, to all of our institutions, carry the mind upward as far as possible; but begin with the elements, lay the foundation first, and then build up; if you cannot build high, make the structure durable and of good materials, and let us have everywhere as many of the institutions as possible. Such, we think, is the voice of the people, and experience teaches the truth, that we must begin with the young, while yet in the common schools, and that to them most especially, should be imparted the impulse to learn, as well as the impulses to think and to do.

In all this matter relating to the education of farmers' sons, your committee, in suggesting plans for this end, would not lose sight of the consideration, that it is not merely the education which qua-

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lifies the man for the successful farmer which is wanted, but a higher end is to be proposed, viz: that which fits him for the duties of the citizen. In many systems of education, we fear this great end is left out of view, or does not enter into the scheme. When we have seen the proposed plans of organization of agricultural schools, and on finding that their operations were merely to be confined to chemistry, the breeding of cattle, experiments in husbandry, or the theory of manures, or even the best modes of conducting a farm, we have felt that there were matters quite essential to an education, entirely forgotten or omitted. Every young man should know something of the principal forms of government, the rights and duties of citizens; political economy and moral philosophy ought to constitute a share of the education of the young farmer. A scheme of education properly carried out, would impart an upward tendency to the movement of the present generation, and such a tendency is what the times seriously demand, and hence it is, that your committee regard the principle of granting its endowments so as to benefit the greatest number, of so much importance.

Before we conclude our report, it is proper that we should allude to what the State has done and is doing, for the special benefit of agriculture.

The agricultural societies receive annually from the funds of the State, $8,000. The Transactions of the State Agricultural Society are published annually at the expense of the State, in large numbers for distribution. But a still more heavy expenditure has been incurred by the State, in the prosecution of the geological survey. This work was designed to benefit the agricultural interest of the State. But we must look more immediately to the agricultural survey now in progress, to accomplish more directly the end originally proposed in this great and expensive work; indeed the person who has in charge the agricultural part of the geological survey, is now engaged in the investigation of these very subjects, and in which much progress has been made, which the petitioners propose to prosecute themselves.

Farmers may therefore be assured, that though the State do not propose to open new channels of expenditures for the special benefit of agriculture, still a work is in progress, which will soon be completed, the business of which is designed to benefit the farmers of the State.

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It appears, therefore, to your committee, that the State is now doing as much for agriculture as can be reasonably asked of her, or can, under present circumstances be sustained; if, however, additional grants are to be made for educating farmers' sons, or the sons of any, who propose to pursue the business of farming, it would be better that they should be given to those academies which will give annually a regular course of instruction in agricultural chemistry and the collateral branches. By directing the study of agriculture in these channels, we believe the whole people will be made, to some extent, the partakers of the benefits; and in this way agriculture will be promoted in the cheapest and least objectionable way.

It may be said that the academies are not supplied with teachers capable to instruct in the departments proposed. But it is believed that the present teachers, finding what the sentiment is, in regard to this matter, will proceed to qualify themselves for the additional department. Interest will direct this course, for already the study of agriculture has been introduced into some of our best academies, and hence, others must follow the lead, if they would sustain themselves. This plan too, if favored, can scarcely fail to excite the honorable ambition of excelling, or of rivaling neighboring institutions in excellence; a sentiment which might well be encouraged by an award of medals, either by the State or county societies, in which such institution happened to be located.

We look upon agriculture, as the most important interest to the people of the State, and regard every movement with pleasure, which is calculated to advance its interest; but we consider that to be educated for a farmer, means something more than the mere ability to hoe corn, or to breed, buy and sell cattle. We hope the day is not far distant, when an uneducated farmer will be as rare a person as an uneducated lawyer, physician or minister. We mean, too, by an education something more than a knowledge of the mere routine of the farm, and farming operations; we mean by the term, a mental training, by which the man who works amid the complicated arrangements of the subtle and refined agencies of nature, will be able to understand those arrangements and give direction to the laws which control them.

A. BECKWITH,
SAMUEL LAWRENCE,
WM. TEMPLE,
JOHN McGONEGAL.

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STATE OF NEW-YORK.

No. 150.

IN ASSEMBLY,

April 9, 1847.

COMMUNICATION

From the Secretary of the New-York State Agricultural Society.

STATE AGRICULTURAL HALL,
Albany, April 9, 1847.

Hon. W. C. HASBROUCK,

Speaker of the Assembly:

SIR—Pursuant to the provisions of the "Act for the encouragement of Agriculture," and the act amending the same, I herewith transmit to the honorable the House of Assembly, the proceedings of the New-York State Agricultural Society, with the annual report of the Executive Committee, and abstracts from the reports of all the county agricultural societies, and the American Institute for the year 1846.

I am very respectfully yours,

B. P. JOHNSON.

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IN ASSEMBLY.

APRIL 10, 1847.

Resolved, That ten times the usual number of the report of the New-York State Agricultural Society be printed for the use of the Legislature. Also 500 copies for the State Agricultural Society; 500 copies for the American Institute, and 40 copies for each county in the State, for the benefit of the Agricultural Societies of said counties, to be printed under the direction of the Executive Committee of the New-York State Agricultural Society; and that the same be bound in like manner as those formerly bound by the Agricultural Society, and that the expenses of binding be paid out of the contingent fund of the House.

By order,

P. B. PRINDLE, *Clerk.*

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TRANSACTIONS

OF THE

NEW-YORK STATE AGRICULTURAL SOCIETY.

ANNUAL REPORT OF THE EXECUTIVE COMMITTEE FOR 1846.

To the Legislature of the State of New-York:

The executive committee of the New-York State Agricultural Society, in accordance with the Act for the encouragement of agriculture, passed 5th May, 1841,

RESPECTFULLY REPORT:

That the committee have, according to the rules of the society, held monthly meetings for the promotion of the cause in which they have labored, which have been very regular and well attended.

On entering upon their official duties, the executive committee made arrangements to extend the field of usefulness of the society, but unfortunately, circumstances beyond their control prevented them from carrying out their designs. It is hoped the officers for the ensuing year, will be more fortunate and extend agricultural information and statistics into all parts of the State.

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One of the first duties of the committee, was the establishment of a premium list, in which was offered premiums amounting to $2,000 in money, besides many valuable books, payable in 1846. They also offered premiums payable in 1847 and '48, of $200 for the cultivation of series of crops, with a full and detailed account of the experiments, for which purpose the following report was adopted, viz:

"Whereas the Agricultural Society of the State of New-York has not an experimental farm, and as satisfactory experiments can be made by intelligent farmers upon their farms; therefore

"*Resolved*, That three premiums be awarded of $30, $20 and $10 in January, 1848, for the best experiment upon a herd of not less than (8) eight cows, to determine the relative advantages of soiling or depasturing milch cows. Also for the best experiment to be continued through three crops, to ascertain in bushels of grain and weight of straw or stalks, the actual value of manure to a farmer." These experiments were to be conducted under such rules as were then made, and published, (see the Cultivator for 1846, page 83, and American Agriculturalist, page 134,) for which premiums will be paid of 40, 30 and 20 dollars. Also, for the *best* experiment with any crop without any prescribed rules by the society, a premium of $20.

It is hoped that these premiums will induce many of the farmers of New-York, to make experiments of the before mentioned crops, &c., and thereby contribute much to the agricultural knowledge of our State. The committee are aware that however accurate and valuable these reports may be, they can only approximate to the value that would result if there was established, by the State an experimental farm where such experiments could be made without any regard to the profits of the result, which will and must be the case when conducted by individual enterprise.

Another important duty was the establishment of weekly meetings at the Capitol, for the discussion of agricultural subjects in general; these were placed under the care of the corresponding secretary. Whilst the committee think much good has resulted from these meetings, they are of the opinion that much more can be done than has been, and hope that the present executive committee will be able to accomplish much more.

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From the farmers, and men engaged in all the various pursuits of life, the executive committee receive daily applications for the published transactions of this society, as well as books pertaining to agriculture, and as the society increases in knowledge and extends its field of usefulness, so will the value of these transactions increase; and we fondly hope the day is not far distant when they will be read by every citizen of the State. And they would respectfully suggest whether at this time there could not be extracts taken from these transactions and made into a book suitable for our common schools. It would induce a desire for reading agricultural works, and render essential service to the reader in after life.

The annual exhibitions of the society are yearly increasing in importance and magnitude. It is now the holiday of the farmer and artizan. To it they all come; not single and alone, but with their whole families. Nor are the visitors to this festival confined to the farmer and artizan. The professional gentleman and politician, are contributors to the great multitude that yearly visit these exhibitions. Nor are the visitors confined to citizens of this State. Vast numbers come from other States and foreign countries, thereby showing that the cause of agriculture is taking deep root in the minds of all classes of people. And in the increase of agricultural productions in the vegetable and animal families, lies the great source of the wealth of any nation. In carrying out the recommendation of the society to hold the show and fair at Auburn, the committee received every possible aid from the citizens of that village, by preparing a plan, (through one of its citizens, Geo. Casey, Esq.) for the grounds and buildings; and too much praise cannot be bestowed upon the ladies, who, under the superintendence of Dr. Alex. Thompson, of Aurora, arranged and ornamented Floral Hall.

The grounds were admirably selected, in the eastern part of the village, on Capitol hill, from which, to the north, the eye rested on the blue expanse of Lake Ontario; to the west, it stretched across the Seneca lake upon the highlands of Ontario; to the east, it viewed the rising grounds towards the Skaneateles lake, whilst to the south your eye rested upon the mild and placid waters of the Owasco, renowned in history, called Ensinore, Queen, by the aborigines of North America.

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The ground appropriated for the use of the society was near twenty acres. Thirteen of which were inclosed by a board fence ten feet high; the remainder was used as a common ground, through which the visitors could have at all times access and egress to the show grounds. Through the show grounds, from north to south, ran a ridge, from which was had the view before described, and where could be commanded a view of the beautiful village, as well as the whole show grounds. Annexed is a plan of the grounds, fenced in octagon shape, upon which were placed all the necessary buildings, pens, tents, &c., &c., for the occasion.

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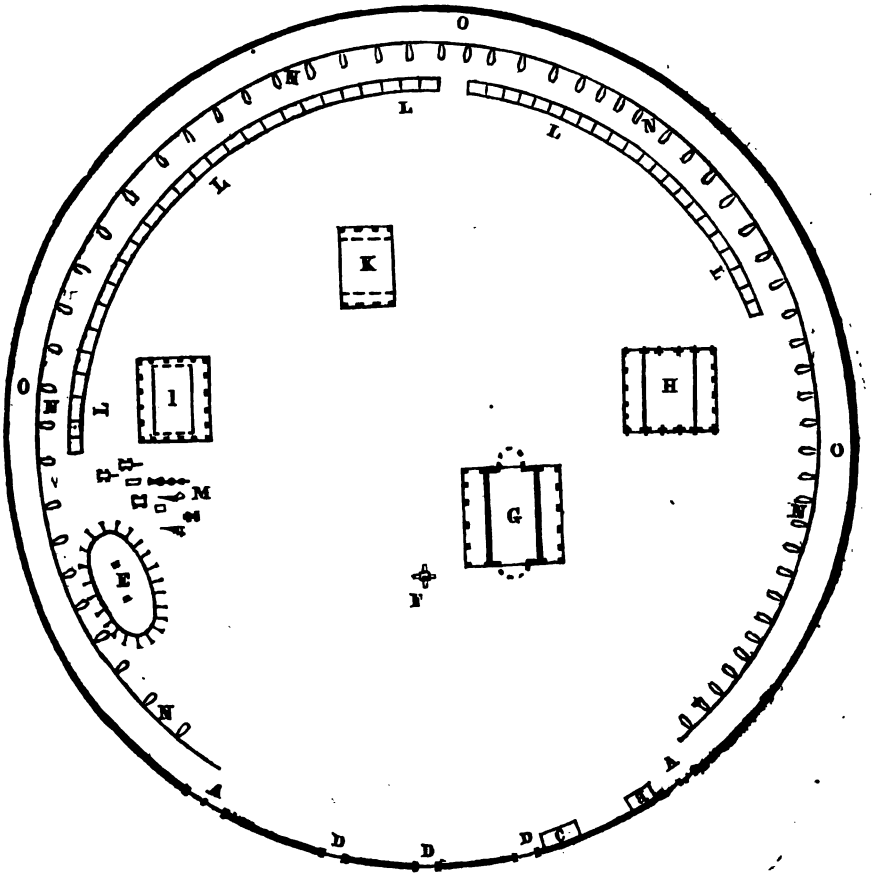
PLAN OF THE SHOW GROUND.



The entrances, A, A, D, D, D, front the west.

A, A. Gates, for the entrance of animals, carriages, implements, &c.

D, D, D. Gates for the entrance of visitors on foot.

B. Building for committees, with a tent adjoining for refreshments.

C. Business office of the executive committee; for the entrance of articles for exhibition.

E. Grand tent, under which the address was delivered and the premiums declared.

F. Flag staff.

G. Floral hall, for the exhibition of fruits, flowers and vegetables.

H. Hall of manufactures, fancy articles, ornamental, needle, shell and wax work.

I. Hall of implements, agricultural and others.

K. Hall of the products of the dairy.

L. Pens for sheep and hogs.

M. Farm implements, wagons, harrows, plows.

N. Fence, with the cattle tied.

O. Carriage way.

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On the west of the grounds lay the receiving grounds, in the centre of which stood the ticket office; in front of this were three gate ways, at about 100 feet distance from each other, for the entrance of persons on foot into the show grounds. At the left of these, at the north angle, was the great gate for the entrance of carriages; and as they entered, passed to the left by an avenue thirty feet wide, making their egress from the grounds at the southwest angle on to the common ground. At about two hundred feet to the right of the ticket office, in a line with the fence enclosing the grounds, was placed the business office, at which entries were made and badges for members delivered, &c., &c. This office was in charge of Joseph Allyn, Esq., of Rochester. For his systematic and energetic discharge of the duties appertaining to that office, the society owe him many thanks. Within the grounds, about sixty feet to the right of this office, was placed the committee room, in which the committees and editors made up their reports. As you entered the grounds by the great gate-way and passed into the centre, at the left stood the society's large tent, which was sufficient to hold three thousand persons. Under this the society transacted their business, and visitors found a place to rest their weary limbs and exchange congratulations with friends.

In the centre of the grounds from north to south on the ridge, stood Floral Hall, about 150 feet long and 50 wide, of the Grecian order, the front of which was ornamented with a portico densely covered with evergreens. The light was admitted by a broad opening on either side from above, softened by a curtain running its whole length. A floor twenty-five feet wide run the entire length, on which were shelves for the reception of articles terraced, having a broad walk of about twelve feet on each side for visitors, and ample room for the committee between the visitors and the shelves. In the centre of this building stood a Gothic temple covered densely with evergreens, and the soft light striking the dark evergreens from above, gave the whole interior a beautiful and magnificent appearance. In this was displayed flowers of various hues; there were the apple and the peach, the pear and the apricot, the squash and the pumpkin, all neatly arranged by Dr. Alex. Thompson. As you passed from this building on its east end at

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your right and a little to the east, there stood the building for domestic manufactures, one hundred feet long and forty wide of the Gothic order, in which were placed broadcloths and kerseymeres, sheep's gray and satinetts, flannels, sheetings, carpets of brussels and ingrain, bed quilts and spreads, stockings and shoes, cabinet and saddlers' ware, fancy needle and shell work, and household manufactures in all its various branches, in silks, woolens, worsted, cotton and flax. This was truly a palace of American queens. This building was placed in the care of Mr. William Barber of Auburn, to whose fine taste in displaying these different articles, the ladies are much indebted.

At your left you have the building for farm implements, which was one hundred feet long by forty wide of Grecian order. This building like its cotemporary domestic factory, was filled to overflowing with stoves and kettles, plows and harrows, shovels and forks, rakes, churns and cheese presses, cultivators, drilling machines for horse and hand power, whilst out side on the east and north, were arranged in great variety, church bells, wagons, sleighs and carriages, threshing machines, bee hives and horse powers, stump machines and clover mills, all in such numbers as evinced that the artizan too was alive to the cause of improvement.

In front of you stood the simple, unadorned building devoted to the dairy. This was also f the Grecian order, seventy feet long, by thirty wide. In consequence of the location of the fair not being in a dairy section of the State, and the demand for the produce of the dairy had been such, that the exhibition in this department was not equal to some on former occasions. But the quality was such as would satisfy the most epicurean taste. Quite around the enclosure from the entrance gate to the gate for departure, were arranged posts for the fastening of stock, and pens for the confinement of swine and sheep. The exhibition of neat cattle, as a whole, was not any better than on former occasions, though the display of Devon cattle and working oxen was quite superior to any other exhibition. In horses, this show has never been equalled. The show in swine was small, which evinced that the attention of the society was necessary to bring the attention of the farmer to

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this important branch of agriculture. In the sheep department, the exhibition was very respectable; many fine samples of the different flocks in this section of the State, as well as some from the eastern parts of it, whilst Vermont and Connecticut contributed to this department.

Poultry came in fully for its part of the exhibition; all the different families of the domesticated fowls, from the majestic and brilliant peacock to the little bantam.

On the morning of the second day of the exhibition, the usual plowing match took place, at which there were seventeen competitors, and was attended by such numbers of the farmers as to evince that they were alive to the great instrument for pulverizing the soil. In the afternoon of this day, the multitude congregated under the great tent of the society, to listen to the annual address before the society, by Hon. Samuel Stevens, of Albany, who contrasted in a vivid manner, the life of the farmer with civilian and professional life, and that of all classes, the farmer had the most cause for contentment. On its conclusion, the reports of the several committees were read, and the society adjourned. But as an afterpiece, a ball was given in Floral Hall, which, for simple elegance has had few if any superiors. Though balls do not belong to any particular branch of the Agricultural Society, yet agriculturists like to belong to such balls, and it is a very pleasant way to end one of these great festivals, and I hope always to see them ended in this way.

That there is a desire among the farmers to acquire agricultural knowledge, is very evident from numbers of those visiting and bringing their products to the annual exhibitions. The number of persons visiting the fair at Auburn, could not have been less than thirty-five thousand.

The number of neat cattle presented for exhibition, was 257. Horses, 149. Sheep, 259. Swine, 40. Of articles belonging properly to domestic matters, their number was legion. So with farm implements and household wares.

The receipts into the treasury, will be seen on reference to the report of the Treasurer, in the proceedings of the annual meeting.

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The society is now in a position, where, by a proper attention on the part of its officers and friends, great improvements may be anticipated in its future operations. It is of the utmost importance that union of effort should be secured among the friends of improvement. The interest of the State and county societies are one and the same. Let them act together for the improvement of the State. Let the same care and attention be given by the county societies, in their requirements from competitors, and soon we should secure certainty, as to the amount of crops which are raised, and information as to the best methods of cultivation would be obtained, so that all could be benefitted thereby.

In several counties, town organizations and Farmers' clubs have already been established, and their beneficial effects are most manifest. Farmers, by an interchange of views among themselves, encourage and aid each other in their labors, increase their knowledge, and thus benefit the whole agricultural interest. It is very desirable that these associations should be extended to every county in the State. That they can be sustained, with proper exertion on the part of the farmers of every town in the State, there is no reason to doubt. It is certainly worthy of a trial, and our county societies would find, by giving attention to this subject, that their own usefulness would be increased, and the benefits of the association be much more widely extended.

In one of our counties, the past year, a town association has been organized, and meetings, during the winter, were held weekly, for the discussion of agricultural subjects. These were fully attended, and increased in interest. Reports were made at each meeting, on some practical subject, and the amount of information secured, must result in great good to the farmers. In the fall, a fair and show was held, which excited much competition, and was, in some respects, equal to the county exhibitions. This is alluded to, as evidence of the successful and beneficial operations of such organizations.

The annual meeting was held at Albany, on the 20th and 21st of January, 1847.

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The whole of the proceedings on that occasion showed a growing interest in the cause of agriculture, and a continued confidence in the utility of the society.

Whilst this society continues in its proper and legitimate sphere, and avoids the exciting topics which frequently agitate the public mind, and aims to increase the products of the soil, and thereby make industry more profitable, it cannot but secure and preserve the confidence of a people whose institutions justly cherish *labor* as honorable.

In behalf of the executive committee,

J. M. SHERWOOD.

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NEW-YORK STATE AGRICULTURAL SOCIETY.

Annual Meeting, January 20, 21, 1847.

The society held its annual meeting in the Assembly chamber, which was kindly offered for its use by the Hon. House of Assembly. A more than usual number of delegates and others interested in the advancement of the agricultural interests of the State, were present.

The president of the society, J. M. Sherwood, Esq., in the chair. Luther Tucker, secretary. A committee of three from each of the old senate districts was, on motion of L. F. Allen, Esq., named by the members in attendance from the several districts, to report the names of officers for the ensuing year, and to recommend the place for holding the next Fair.

On motion of Benj. Enos, Esq., of Madison, it was resolved that a committee of three be appointed to memorialize the Legislature for a continuance of the appropriation to the State and County Societies, which is cut off by the provisions of the new Constitution.

Mr. Enos, of Madison, B. P. Johnson, of Oneida, and L. Tucker, of Albany, were appointed the committee.

The following persons were named as committees from the senate districts:

1. S. S. Benedict, Jas. H. Titus, Wm. Small.
2. Lewis D. Bevier, Wessel S. Smith, Jas. E. Beers.
3. I. I. Viele, A. Van Bergen, I. P. Beekman.
4. O. Clarke, T. J. Marvin, A. Beckwith.
5. B. Enos, John Dean, A. P. Grant.
6. Chas. Cook, J. S. Wadsworth, E, Mack.
7. G. V. Sackett, I. P. Rathbun, I. M. Ellis.
8. Wm. Buel, G. Hard, I. T. Bush.

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Mr. Allen, of Erie, called up the resolution offered at the last annual meeting by Maj. E. Kirby, for an amendment to the Constitution, as follows: "That all Ex-Presidents shall be standing members of the executive committee, in addition to the board as now provided for," and the said amendment was unanimously adopted.

Mr. Allen remarked that the constitution of the society required a Vice President in each senate district, but as the number was now increased, he gave notice of an amendment to the constitution, "that one Vice President should be appointed from each judicial circuit."

Mr. Viele offered the following resolutions on the subject of experimental agricultural schools:

Resolved, That in the opinion of this society, the profession of practical agriculture connot fail to be vastly improved by a general diffusion of scientific knowledge applicable thereto.

Resolved, That by uniting scientific knowledge with practical skill, the profession of agriculture will obtain the elevated station that belongs to it, and we regard it as a sure method of improving the moral condition of the people.

Resolved, That the society respectfully recommend to the consideration of the Legislature now in session, the propriety of adopting measures calculated to promote this object, by making reasonable appropriations for the establishment of agricultural schools or colleges connected with experimental farms.

Mr. Johnson, of Oneida, wished these resolutions discussed this evening. He deemed the connection of science with practical agriculture of the very first importance, and that it was desirable to spread before the Legislature and the people the importance of the subject, so that it might receive early attention. The resolutions were laid on the table for further consideration.

J. McD. McIntyre, treasurer of the society, presented his report, showing the following receipts and expenditures for the last year:

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Receipts.

Balance per last report,	$546 21
Members at annual meeting,	137 00
Wm. Buel, life member,	50 00
Members at various times,	10 00
Dividend on Mohawk bonds,	105 00
Interest on bond and mortgage,	70 00
Receipts at Auburn show,	4,333 17
Jas. Fellows, for Pultney estate,	50 00
State of New-York,	700 00
Interest on Mohawk bonds,	105 00
Transactions sold,	5 00
Interest on bond and mortgage,	70 00
	$6,181 38

Payments.

Premiums paid,	$1,599 43
Expenses at Auburn,	710 82
Salaries paid,	706 00
Sundry expenses,	630 71
Invested bond and mortgage,	2,000 00
Balance in hand,	534 42
	$6,181 38

Mr. G. Geddes, of Onondaga, offered a resolution, that the interests of the agriculturists of this State require that the railroads be allowed to carry freight the year round.

Mr. Allen, of Erie, suggested, "By the payment of tolls."

Mr. Geddes did not know about that. It would be just as fair to compel the farmer to pay for conveying a load of wheat to market upon his own sleigh or wagon. Existing laws are prejudicial to the farmer, and it was evident to every man, who reflects upon the subject, that the farmer is prohibited from sending his pork, in the

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hog, to New-York or Boston, until the canal is closed. The conveyance by the canal is too slow, and the railroads are not allowed to take freight until the navigation is closed; and last year freight was so high that farmers were compelled to store their produce until ice was formed in the canal.

Mr. Marks, of Greene, deemed these resolutions irrelavent, and not proper for discussion here.

Mr. J. S. Wadsworth said he considered this a legitimate subject for this society. The duty of the society was not confined to the mere awarding of premiums. Whenever there was discovered existing laws which operated prejudicially to the interests of the farmer, it was their duty to take those laws into consideration, and by all lawful and proper means seek their repeal. He proposed a substitute for the resolution of Mr G., which more specifically detailed the grievances justly the subject of complaint by the farmers of the State. He enforced the remarks relative to the high price of freights the last year, and said, that farmers were in many instances obliged to store their produce until the market was closed, in order to get it to market at comparatively moderate rates.

The resolutions offered by Mr. W. are as follows :

Resolved, That in the opinion of this society, any restrictions upon the transmission to market of the products of the soil and industry of the country, are alike injurious to the interests of the producer and the consumer, and when not required by the exigencies of the public service, an invasion of the rights of the citizen.

Resolved, That this society regard the prohibition in the charters of the railroads parallel to the Erie canal, against the use of said roads for the transmission of freight during the continuance of canal navigation, even though the same tolls are paid, as are exacted upon the Erie canal for the same distance, as an unnecessary, and therefore unwise interference with the industry of the State.

Resolved, That the executive committee of this society be directed to prepare and lay a memorial before the Legislature, praying that honorable body to remove these restrictions.

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Mr. W. remarked, that in presenting these resolutions, he did not speak for railroad corporations, but for the agriculturists of the west. They were suffering on account of these restrictions, and they were entitled to be heard; and the time had arrived when it was their duty to speak out, and he saw no good reason why they should not be heard, and their request granted.

Mr. Beckwith said, that quite a number of the members of this society present were also members of the Legislature, and he did not deem it proper for this society to pass these resolutions. It might be taken as a committal of those who were members of the Legislature. He for one desired to be at liberty to act upon them, if presented to the Legislature, as to his judgment should seem proper, after hearing all the arguments that might be brought to bear on the subject.

Mr. Geddes remarked, that there were members of the society who were *not* members of the Legislature, and they wished an opportunity to express their opinion on this subject. There were here farmers of western New-York, who wish to get to market the quickest and cheapest way possible, and it was right that they should have an opportunity of being heard.

Mr. Viele did not doubt the propriety of this society expressing an opinion upon any other than a clearly political question. He did not say this was a political question, but it was a question of finance. He was in favor of opening every possible avenue; but he was not prepared to say, that the farmers of the west should be permitted to reach market without sustaining by tolls, the great ca nal which the common wealth of the State had built. There was something due to the farmers at the east, who had been taxed to build the Erie canal. These works are not yet paid for. Until they were, it would be neither wise, nor just, to the farmers of the river counties, to take from the revenue of the Erie canal. When the existing indebtedness is removed, he would go not only for allowing them to carry freight, but to carry it without paying tolls.

Mr. L. F. Allen agreed mainly with the remarks ofthe gentleman from Rensselaer, and was anxious to have the reform sought, carried out. He doubted whether the roads should not pay tolls to

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the State, if the improper restriction was removed. It is true, that the west has been greatly benefitted by the Erie canal, but so has the east. Their farms on the river are now worth 100 per cent more than they were in 1817, when the original canal law was passed. Their attention has been turned to other products, but the advantages which they have derived from this great work are unspeakable. But it is of the highest importance to the farmer of the west, that he should be enabled to reach the market at all seasons of the year. Poultry, fruit, fresh meats, &c., could be sent to the eastern markets, if farmers were permitted to avail themselves of the rapid movements of the locomotive. But he would not, just now, ask for this privilege, without offering the payment of tolls.

Mr. Mack, of Tompkins, said that he considered this a question of the greatest importance, but he doubted whether the Society could now with propriety entertain these resolutions, or if it could, was this the proper time for its agitation? It involves a question of policy, which has occupied months of the time of the Legislature in its discussion. Was not the canal large enough to accommodate the wants of the west? Some say not. Then why not enlarge it? the people have the power to do so, if they choose to exercise that power. But, sir, the importance of this subject is such, it has so many bearings upon the great interests of the whole State, that it seems to me in the little time we have for its consideration, it is impossible for us to vote understandingly upon it. He would not say that in the proper place, he would not vote for the principle involved in the resolutions; but he would say, that he very much doubted, whether it was right for this Society to act upon this question.

Mr. Wadsworth remarked that gentlemen seem to enter upon the discussion as if it were proposed to take from the revenues of the State. Nothing is said about tolls, nor was there any thing political involved in this subject.

Mr. Johnson, of Oneida, said, that he was satisfied public sentiment was greatly divided on this subject, and he doubted whether it would be wise for the Society to act upon these resolutions at present. If they were to be voted upon, he trusted that members of the Legislature who desired it, might not be called upon to vote. He could not perceive why it would not be as proper to agitate the

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question before this Society, for the immediate enlargement of the canals—and yet he presumed no gentleman would be willing to drag that question before the Society.

Mr. Lawrence, of Onondaga, deemed the resolutions perfectly legitimate and the discussion proper. It was a question in which the farmers of the west were deeply interested—for last fall they could not send their produce, not because the canal was not large enough, but because there were not boats enough. If the privilege had been extended to the rail roads last year, immense quantities of produce which had been held back, would have gone forward, and the farmer would have been benefitted. He was in favor of exacting tolls from the railroads.

Mr. Peters, of Genesee, considered the restrictions upon the railroads as very injurious, and wished them removed. He was in favor of the roads paying toll. He said the dairy interest of the west is entirely cut off from market for many months. If butter could be forwarded promptly, those who produce it at the west would be willing to pay double or treble toll. They could afford it; and they would give to the Atlantic cities as good butter as could be produced in the world. The farmers of the west only ask justice, that they may have the opportunity of reaching market with their produce at all seasons of the year.

Mr. Comstock, of Oneida, moved to lay the subject on the table, which was lost, 27 to 28.

Mr. Allen, of Erie, deemed this question involving the interests of the farmers alone. There was not a particle of politics about it. It simply looked to an end of great importance to the farmers of the west, a readier mode of getting to market.

Mr. Sage, of Tompkins, was aware that this subject could not be fully discussed, but this Society might express its sentiments. The farmers were looking for more convenient channels to reach markets. For two years excessive freights had been exacted upon the canal, and it was time a change was effected.

Mr. Bloss of Monroe, was glad this subject had been brought up, because he and others needed light. He was in favor of cheap

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and rapid avenues to market. The principle involved in the resolutions was right. This State had two great rival interests—the railroad and the canal, and it is only necessary that she should secure to herself, equal revenue for both.

The resolutions were passed, and the society took a recess until 7 o'clock, P. M.

EVENING SESSION.

The Society convened at 7 o'clock. There was a full attendance.

Mr. Sherwood took the chair; and

G. V. Sackett, of Seneca, from the committee to nominate officers and designate the place of holding the next fair, reported for

President—GEORGE VAIL, of Troy.

Vice-Presidents.

1st District, W. T. McCOUN.
2d " JOHN A. KING.
3d " E. P. PRENTICE.
4th " SAMUEL CHEEVER.
5th " O. C. CHAMBERLAIN.
6th " ELI C. FROST.
7th " H. S. RANDALL.
8th " WM. BUELL.

Recording Secretary, LUTHER TUCKER.

Corresponding Secretary, JOEL B. NOTT.

Treasurer, J. McD. McINTYRE.

Executive Committee, WILLIAM A. BEACH, JOSHUA T. BLANCHARD, LUTHER BRADISH, G. V. SACKETT, THOS. J. MARVIN.

The committee also recommended Saratoga as the place for holding the next State Fair.

Mr. Prentice was willing to share the burthens of the Society. He had done so from its formation; but he was of opinion that others should now assume the duties with which the Society had so long honored him. He felt flattered by these repeated expressions of the confidence of his associates; but begged leave to decline the present proffer.

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The report was accepted, and Mr. C. N. Bement substituted for Mr. Prentice.

Mr. Wadsworth moved to proceed to ballot for President.

The motion to proceed to the election of President prevailed.

Mr. Young, of Saratoga, enquired whether the report had not been accepted? If so, that terminated the matter. It was an election of the gentlemen named.

Messrs. Grant and Bloss believed that an *acceptance* of a report was not generally considered an *adoption* of it. The question remained to be decided.

Several gentlemen expressed the opinion that separate ballots for each of the officers would occupy too much time.

Mr. Bloss moved to reconsider the vote to ballot for President. Carried.

And the Society proceeded to ballot for all the officers upon a single ticket. The names reported by the committee were elected, by a large majority.

REPORT ON APPLES.

Mr. Allen remarked that the committee on fruit (Messrs. Allen, S. Young, and H. Wendell) were prepared to report in part. They recommended a list of apples, best adapted to home use and exportation. This list he would present, and ask that the committee might be continued, which was granted.

Mr. A. said that it was admitted that the climate of this State was well adapted to the cultivation of apples, pears, peaches, &c., and he did not doubt that within a year, the subject of fruits had become to be better understood than ever before, and more had been learned in five years than had been learned previously from the day of the landing of the Pilgrims.

The study was deeply interesting. The whole people seem to have taken hold of it. The result is, that immense quantities of excellent fruit are now annually exported; and there are some farmers

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on the north river who make more from their orchards, than from their whole farms beside.

Mr. A. read the following list of Apples, which he highly recommended:

EALY.—Early Harvest, Early Bough, Strawberry, Williams Favorite, Early Joe.

AUTUMN.— Fall Pippin, Golden Sweet, Gravenstein, Jersey Sweeting, Rambo, Detroit.

WINTER.—Baldwin, Yellow Bell-flower, Hubbardston Nonsuch, Newtown Pippin, Northern Spy, Blue Pearmain, Rhode Island Greening, American Golden Russet, Roxbury Russet, Swaar, Ladies Sweeting, Tallman's Sweeting, Esopus Spitzenburg, Vandervere Waxen Apple.

He would not say the apples here named were the best in the world; but he deemed them the best which were adapted to our climate—better than any other which could be named. Mr. A. spoke highly of the "Northern Spy." He said, without fear of contradiction, that it was the best apple plucked since the days of Eve. It originated in West Bloomfield, many years ago; and is now the most popular apple in the West. It retains its flavor into June or July, and is equally good for eating or cooking.

Mr. Young, of Saratoga, said that the American varieties of apples were better than any ever imported. The Seckle Pair is better than any in England. We obtain spontaneously what England cannot procure by the most expensive cultivation. This is partly owing to our climate. The fact that we have better fruits is shown by the anxiety in England to procure what we export. The Newtown Pippin, has been extensively exported. Thousands of barrels were sent out last year, and sold for from eight to ten dollars a barrel. This year this apple has sold in England for 5s a bushel more than flour. Our early pears are also better than any in England. There are none in England equal to Dearborn's Seedling and the Bloodgood pear.

Mr. Young referred to the efforts made in Europe to cultivate pears. Great success had attended these efforts; but we have, in

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our Seckle, Dix, Bloodgood, &c., better pears than any ever produced in Europe. He cited one pear, the Columbian, which had sold for $8 a bushel in New-York. He did not think this Society could do better than to encourage the cultivation of fruit—of apples in particular, which is the staple fruit of this country. This Northern Spy apple he believed to be the best he ever saw or tasted, and hoped it would be encouraged. He referred to Stevenson's Genessee pear, which he considered to be one of the best he ever met with. This, too, like the Seckle, &c. had come up spontaneously.

Mr. Allen said the Northern Spy had sold in Rochester for $2.50 a barrel, when excellent fruit was selling for $1 a barrel; and he considered it worthy the endorsement of the Society.

Mr. Marks was glad this subject of fruit had been brought up. He deemed it important. He gave his experience in the cultivation of fruit, particularly of the Seckle pear, which he had cultivated with great success. The new Spitzenburgh apple, he had also found to be a very superior fruit.

Mr. Clark remarked that if he wished good fruit, it would be desirable to quiet some good men's consciences. For in his part of the country many such had cut down some of the finest orchards he had ever seen. In order to stop this, he recommended that the Society should turn their attention to the cultivation of men's consciences.

Mr. Young remarked that this habit had grown out of the other habit of making cider. Many good men deemed it wrong to produce intoxicating drinks. This led to the destruction of many orchards. But he presumed no one believed it wrong to eat a good apple.

PLACE OF HOLDING THE FAIR.

Mr. Wells, of Troy, enquired whether the report of the committee, locating the place for holding the fair, was final?

The chair. Not at all. That report is a mere recommendation. The executive committee have the whole charge of this matter.

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Mr. Wells. O very well; I move that the society recommend Troy as the place for the fair, instead of Saratoga.

Mr. T. Smith believed that the recommendation of the committee of 24 should be regarded. He had no partiality for Saratoga over Troy. The citizens of both places would take care that those who visited them were well entertained. But he thought some weight should be given to the recommendation of the committee. They were to be deemed disinterested.

Mr. Wells said it was not out of disrespect to the committee he had made the motion. But he thought, as this subject had been referred to a committee, merely to obtain their recommendation, it would not be out of place to secure the recommendation of the society also.

Mr. Clark was of opinion that the gentleman last up, had not paid attention to the doings of the society. If he had, he would have known that this subject had been specially referred to the committee. It was proper that the subject should be reported upon by a committee; for if the locality of the fair, was to be left with the members of the society alone, who does not see that any adjacent city, could at any time, control the action of the society, by coming in and voting down those, who, in small numbers, had come from a great distance. Such action would soon break up any society.

Mr. Beers moved to lay the resolution on the table. Carried.

Mr. Prentice wished to know what security the committee had, that Saratoga would meet all the necessary local expenses. Heretofore there had been deficiencies.

Mr. Sackett remarked that gentlemen from Saratoga were prepared to give ample security, that all local expenses would be met, and that the charges at the hotels would not be above the ordinary rates.

Mr. Davidson, on behalf of the citizens of Saratoga, remarked, that all that the society could ask, would be done.

Mr. Allen lived so far away from any locality contending for the fair, that he would, erhaps, be deemed impartial. He, therefore,

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felt free to say, that he believed the report of the committee recommending Saratoga, would be received with general disapprobation. Saratoga would not be deemed to be an accessible point. Although Auburn was on the central line of railroad, there was great disappointment last year, from the inability of the railroads to do all that was pressed upon them. The same thing will be found true of Saratoga. He feared it would be a failure. It certainly would be, unless the railroads leading to Saratoga were greatly improved. Yet he was willing to try the experiment. It might as well be tried now as at any other time. But he warned gentlemen of Saratoga, that they must be prepared to do more than ever had yet been done.

Mr. Sever thought the northern part of the State was entitled to a little consideration. There were many excellent farms in that part of the State, and in Washington county, more sheep were grown, than in any other county in the State. He also contended that abundant accommodations would be found at Saratoga, and believed that the society would have no cause to repent, if the decision of the committee of 24 was confirmed by the executive committee.

Mr. Viele addressed the society, to show that Troy should be selected. In Saratoga, in mid-summer, when 3,000 or 4,000 strangers are there, it is found to be full. What will be its condition when 40,000 or 50,000 strangers press into that locality? Besides, the railroads are ricketty affairs, upon which few men will be willing to risk the lives of their valuable animals. There are leading to Troy, the Hudson, the Erie canal, the Boston railroad, and the Western railroad. Tens of thousands would press through these channels to a fair so well located; and the treasury of the society would be filled. Mr. V. further, and at considerable length warmly urged the advantages of Troy over Saratoga.

Mr. Sever followed, stating that if that place is to be chosen which is most accessible, and has the greatest number of avenues leading to it, New-York, and not Troy would be selected.

Mr. Geddes didn't know any good which would be likely to result from this debate, unless it was the repair of the railroads leading to Saratoga. This was needed; for neither of the roads are any thing more than rails upon two legs. But they would doubtless be

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repaired, and every possible facility secured to carry forward the enterprise. They would be required, unless the prophecies of ill should be fulfilled, which he would not believe.

Without taking the question, the society adjourned to meet again to-morrow, at 10 A. M.

January 21.

The society met at their rooms.

J. M. SHERWOOD, *President, in the chair.*

The following were the

PREMIUMS AWARDED.

On cheese dairies and their management.—Newberry Bronson, Warsaw, Wyoming county—first premium, $50. Average produce of 400 lbs. to each cow in dairy of forty cows.—Mr. and Mrs. Wm. Ottley, Phelps, Ontario county—second premium, $30. Average produce of 400 lbs. to a cow, in a dairy of 8 cows.

On butter dairies.—B. H. Hall, New Lebanon, Columbia county—first premium, $25.

Indian corn.—Charles W. Eells, Kirkland, Oneida county—first premium, $15. 123½ bushels per acre, and 56 lbs. to the bushel. Benjamin Enos, De Ruyter, Madison county—second premium, $10. 111$\frac{23}{56}$ bushels per acre. Robert Eells, Westmoreland, Oneida county—vol. Transactions. 103½ bushels per acre.

Peas.—Amos Miller, Vernon, Oneida county—second premium, $10. 47 bushels per acre.

Farms.—Sets of Society's Transactions were awarded to James Callamar, New Scotland, Albany county, and to James Van Sicler, Jamaica, Long Island.

Prize Essays.—"Extirpation of Canada Thistle"—Ambrose Stevens, New-York, $10. Lorenzo E. Todd, Lake Ridge, Tompkins county—set Transactions.

Experiments on Indian corn.—J. F. Osborn, Port Byron, Cayuga county, $20.

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Root Crops.

Carrots.—Wm. Wright, Vernon, Oneida county, first premium, $10. 909 bushels on $1\frac{3}{100}$ acre, at an expense of $25.76. Wm. Risley, Fredonia, Chautauque county, second premium, $5. 1590 bushels on $1\frac{1}{4}$ acres, at an expense of $109.25.

Sugar beets.—J. F. Osborn, Port Byron, Cayuga county—third premium, vol. Transactions. 774 bushels on one acre fifteen rods.

Designs for farm dwellings.—Mrs. J. M. Ellis, Onondaga Hill, Onondaga county, $15.

Grain Crops.

Barley.—Calvin Pomeroy, East Blomfield, Ontario county, first premiun, $10. 57 bushels per acre on the whole crop. Samuel H. Church, Vernon centre, Oneida county, second premium, $5. 44¼ bushels per acre. E. C. Bliss, Westfield, Chautauque county, third premium, vol. Transactions.

Spring Wheat.—Robert Eells, Westmoreland, Oneida county—second premium, $10 20. 42-60 bushels per acre.

Oats.—Nathaniel S. Wright, Vernon Centre, Oneida county—first premium, $10. 55¼ bushels per acre for 15¼ acres. Robert Eells, Westmoreland, Oneida county, second premium, $5. 77 bushels per acre for one acre thirty seven rods.

Timothy seed.—E. C. Bliss, Westfield, Chautauque county—first premium, $10.

Culture flax.—E. C. Bliss, Westfield, Chautauque county, first premium, $5.

Clover seed.—Henry Brewer, Enfield, Tompkins county, 5¼ bushels per acre, $10.

Mr. Enos from the committee appointed to memorialize the Legislature for a renewal of the appropriation in aid of Agricultural Societies, submitted a memorial which was adopted, and directed to be presented to the Legislature.

On motion of Mr. Allen, of Erie,

Resolved, That $50 be appropriated under the direction of B. P. Johnson, chairman of the committee on cheese dairies, for the pur-

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pose of obtaining documents appertaining to 60 cheese dairies of Herkimer county in 1845, which exhibited cheese at the fair at Utica in that year.

On motion of J. S. Wadsworth, of Livingston county,

Resolved, That the executive committee be directed to offer premiums for the present year to the amount of $2,500, exclusive of books belonging to the society.

2d. That $1,500 be appropriated for the expenses of the society for the year 1847 other than for premiums, and that the authority of the Treasurer to make payments from the Treasury upon the order of the executive committee be limited to that amount.

Mr. Allen, of Erie, gave notice that a resolution will be offered at the next annual meeting of the society, so to amend the constitution "that a nominating committee of one from each senatorial district of the State, shall be selected from the members of the society present from each senatorial district, who shall report the names of proper persons for the officers of the society for the ensuing year; and that no person shall be elected to any office of the society who is not a member."

The Society met in the Assembly Chamber at 7 o'clock. The attendance was not as large as last evening; but many of the leading agriculturists of the State were present. Mr. Sherwood resumed the chair, and the secretary, Mr. Tucker, announced the premiums awarded by the several committees.

The President then delivered the annual address:—

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ADDRESS OF J. M. SHERWOOD, Esq., President.

FELLOW MEMBERS OF THE SOCIETY :

Through the benificence of that Being who created the earth and established the seasons, seed time and harvest, we are again allowed to assemble on another anniversary of our society. It is also an occasion of gratitude to the Dispenser of all good, that during the year past, the increase of the soil has not been withheld, and that the farmer has been permitted to gather into his barn the bountiful rewards of agricultural labor.

While our flocks sheltered from storms are resting from their toils, and our fields are clad in their wintery garments, we have come up here not only to interchange with each other those friendly and social sympathies and congratulations which are incident to a meeting of this character, but also to receive from and communicate to each other our individual experience, observation and knowledge, pertaining to agricultural pursuits. This meeting, therefore, brings profit as well as pleasure to us all.

While this evening, in my own language and way, I offer such considerations touching the objects of our society as have occurred to me, I shall greatly need and expect your generous indulgence. When we last met and made choice of Auburn, as the place for holding our fair, you will doubtless remember the fear experienced and freely expressed by many friends of agriculture, that it might prove disastrous to their cause and unfortunate for the society. Happily these fears were dissipated. The fair was well and numerously attended, and afforded abundant evidence that the cause of agricultural improvement had taken deep root in the minds of the farmers. Hereafter, you have only to locate the fair on any of

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the great highways in the State, and with proper exertion it will meet with a hearty response from the tillers of the earth.

It is not my intention, gentlemen, to detain you this evening by a dissertation upon the analysis of the different soils, nor on either of the many subjects falling appropriately within the range of agriculture and agricultural chemistry. Leaving this and kindred questions to other minds, I shall content myself by briefly reviewing the acts of the society from its earliest history, and make such suggestions as have occurred to me for its future operations.

The men who achieved our national independence, and laid up for themselves, in the memory of all coming generations, a grateful remembrance, at an early day after they had established that government whose blessings we now enjoy, soon turned "their swords into plow shares, and their spears into pruning hooks." In the year 1793, we find them at the Legislature, asking for aid in the promotion of agricultural knowledge. They seemed to have surveyed the subject in all its aspects, and to have been fully possessed with the idea of the increased importance of agricultural pursuits, both to the people and the government. Their application to the Legislature received a favorable response, and an act was passed that year, having for its object the promotion of agriculture, arts and manufactures.

Though this act did not appropriate anything from the treasury, yet, in my opinion, it deserves to be spoken of in terms of the highest praise. Half a century has passed since its words of encouragement fell upon the ear of the mechanic and farmer. It gave good earnest of a brighter day to come, in the history of our State. And while we now begin to feel the necessity of waking up to the great cause of agricultural improvement, and look back upon past years, and ask what has been done and said on this subject in the legislative halls, we may well inquire whether this act does not deserve more than a passing notice. It provides for the *promotion* of agriculture. What better provision could have been made in the infancy of this State, by those who had the legislative control of it, to secure its present as well as future prosperity and power? The prosperity of our State is intimately connected with, and dependent

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upon its agricultural resources. It is destined to sway a more powerful influence among the different members of the Union than at present.

It laid deep and broad the foundations of its strength and greatness, by granting at an early day to the tiller of the soil, that encouragement and assistance which the relative usefulness of agriculture demanded.

At the early day of which we are speaking, and while the great agricultural powers of the Genesee were wholly unknown, so much importance was attached to agricultural information, that certain queries were instituted by the society, and sent forth to their correspondents, to inquire into the relative value of the different manures, of soil, tillage, stock, as well as the comparative value of horse and ox labor, grain, grasses, fruit trees, &c., &c., and then even forest trees came in for a full share of their attention. The most influential men of that day joined in instituting and answering these inquiries; and, in fact, legislators, judges and all classes of men bestowed much attention upon this topic, and rapid improvements began to be made in the cultivation of the earth.

The fact that at this early history of the society, we find it and the Chamber of Commerce, in New-York, in correspondence upon the subject we are considering, speaks volumes in behalf of the enterprising spirit among the agriculturists of that period. Indeed, every avenue of information was then thronged, and such an interest awakened in the minds of the people on this subject, that it would have been surprising if improvements in the cultivation of the soil, and consequently an advance of the State in all its great interests had not been their appropriate result. If this spirit of inquiry, which was then abroad among the farmers, had been properly kept up; if all correspondence had not ceased; if, while the State was gradually advancing on the road to its present power, its fostering aid had been extended to agricultural societies in different counties, we may safely assert, the resources of our State, as well as the happiness of the people, would have been greatly augmented. Tracing the history of the Society, from the period of which we have just spoken, we find that as soon as the agricultural interest

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had been excited, and its legitimate fruits were being witnessed, other subjects of national importance began to occupy the consideration of the Legislature. Prominent among them was that of manufactures. The soil was yielding a rich return, and consequently public attention was in a measure properly directed to another great national subject. Europe was supplying our farmers and people with her manufactured products, and was reaping a golden harvest from this market. The genius of our ancestors despised British dependence in every respect. Her institutions of government could not be tolerated, nor could it then or now be endured, that after all, America should be completely at the mercy of foreign countries for any of the comforts and necessaries of life. Our State, in the year 1808, by an act of the Legislature, offered various generous premiums for the best specimens of woolen cloth, to be manufactured in this State; for 200 yards, $150, $75 and $50. To any person who should, in his own family, produce 30 yards of woolen cloth, $80, and a further premium, in plate, of $150, $100 and $50, for the best of any manufactured in the family, which had received a premium in the county in which it was manufactured. Such premiums continued with some variations, until 1814, when the State had paid from its treasury, in premiums, aside from the premiums in plate, $15,-210. It would seem from this, that the State viewed with a jealous eye, the draft which foreign countries were making upon its agricultural wealth, and felt but little diposition to have it said of its husbandmen, "you produce your own bread, but England clothes you." These premiums gave an impetus to manufactures, which have grown with our growth and strengthened with our strength, until our citizens can now clothe themselves in American fabrics equal to any made in foreign countries. While this subject was receiving a large share of public attention, the cause of agricultural improvement was permitted to sleep, until the year 1819, when it was aroused, only to take a longer and more fatal sleep.

The public mind at that time was deeply engrossed with the discussion of the manifold blessings and results, to flow from the joining of the waters of the Hudson and Lake Erie. The agriculturist, the mechanic, the manufacturer, and all classes engaged in this discussion, and scarcely any other subject was permitted to en-

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ter into the public mind, until the completion of this great and ponderous work. The Erie canal is an achievement of which the Empire State is and may be justly proud. But the results which have flowed already from it, cannot be compared with those which may hereafter be witnessed, if the State when its public debts shall be fully paid by this mighty work, shall devote its resources to the advancement of agriculture, arts, manufactures and education. Then will the resources of the State be fully developed, and its progress be onward and upward in all that can elevate man. No sooner was the Erie canal finished and increased facilities afforded for the transportation of the produce of the earth, than the cause of agriculture came again under the consideration of many good and worthy men, whose untiring efforts in the cause will ever be held in grateful remembrance.

In 1832, the Legislature incorporated the present agricultural society, though it did not then render any assistance from the Treasury. The society, though in existence, can hardly be said to have lived until the year 1841, when the collective legislative wisdom of our State, wiser than any of their predecessors, gave to it a helping hand, and imparted fresh interest to the subject, by appropriating an annual donation of $700, besides giving freely to the county societies.

That the society then had life and energy, the State fair at Syracuse that year will abundantly testify. Since that, it has steadily gone on in its work of improvement. Its acts and benefits are too familiar to you all to receive at my hands any commendatory notice. The society has held six annual exhibitions, and has received from the Treasury of the State $4,200, and has received from individuals in donations, memberships, &c., &c., $20,222.96. It has paid in premiums and other expenses $16,888.54, and has on hand $534.42, and invested in stocks and in bond and mortgage $7,000. With this sum, I think the society should be satisfied. It has freely received from the State and enjoyed the liberal patronage of the community, so should its disbursements in premiums be freely made and its thankfulness for this timely aid be manifested. It should continue to live and live only on the good will of the people, and let no effort be untried by its members to secure the continuance of

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public favor. I would not have it accumulate any larger fund than it now possesses. Its present fund will be amply sufficient to sustain it under any ordinary circumstances. This is all we can ask. Let all our receipts in future be paid out in premiums.

Our exhibitions thus far have generally commanded the respect of most of the exhibitors. Some complaints we must annually expect. Indeed it would be quite an anomaly in the history of prize distributions for any purpose, if some were not dissatisfied. Some of the complaints it is not denied may be and probably are well founded. But they were beyond the control of the officers of the society.

I can cheerfully recommend an entire revision of the distribution of premiums; let them be dispensed in a more liberal and extended manner; our present resources and future prospects will justify it. And we owe it to the cause for the improvement of which our energies are devoted, so to bestow the premiums that an increased and continued interest in agricultural improvements shall be promoted. The cost of an article exhibited or for which a premium is offered, should not control the amount of premium. Let utility and the importance of an improvement be the constant standard by which to measure the desert of all articles exhibited.

There are several agricultural implements which, though they have been greatly improved, still deserve our continued attention. First of all stands the plow. This should be made as perfect as possible. I freely admit, that its importance has not been lost sight of by the society, and yet I humbly believe that with proportionate inducements held out by an increased annual premium, we should soon witness considerable improvements in it. There are other instruments for pulverizing the soil on which too much cannot be bestowed to make them perfect. The same plow is not adapted to every kind of soil, and hence the adaptedness of the implement to the soil under cultivation, should be more regarded than at present.

In addition to the usual premiums for stock, I would suggest that premiums be offered for the best essays on breeding the different kind of stock. The dairy should stand prominent in your inquiries for agricultural information. The propagation of seeds should com-

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mand your attention. The increasing importance and value of fruit require that you should continue to offer liberal premiums for the promotion of their culture, and on essays for its cultivation.

Much valuable information would be obtained by having agricultural reports or surveys of some three to five counties in the State, at each annual meeting of the society, selecting each year the counties from different parts of the State in classes, in such numbers as to get the report from the whole State in eight or ten years. The premiums for this purpose should be of such magnitude as to ensure a full report; and by making this the settled policy of the society, you can safely rely on having such reports every year. Emulation in different sections would thus be awakened, and much good would result from these reports, and thus make valuable acquisitions to your transactions. Much good would result to the cause of agriculture, by the society's having in its employment a competent person, who could, as occasion required, inform the farmer of all the agricultural knowledge of the day, also take charge of your agricultural room; and, if I may so speak, be an intelligence officer for the farmer, where he could communicate and receive all the agricultural information of the day.

You will recollect that I briefly referred to complaints made by exhibitors, that their articles do not receive proper attention from the committees. On the other hand, committees complain that they cannot find, by reason of the multitude of people, many articles, or owners for articles when examined. To remedy this, I would suggest the propriety of taking one more day for our exhibition, and on that day admit no person within the grounds but the committees, exhibitors and actual members of the society. It may be advisable, in case one more day be taken, to be even more strict, and admit none within the grounds but the committees and officers of the society. I feel satisfied that the interest of the society demands that one of these rules be put in immediate force. The only question of doubt in my mind is, whether we are quite stable enough to adopt the latter. Whether such rule be adopted, or not, the society should select a competent person to attend to each committee, and present to them the articles for their examination. This would render the duty of the commit-

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tee less arduous, and much more agreeable than under our present system, and render the difficulties of obtaining committees much less.

But the duties of the society stop not with the cultivation of the soil, and breeding of stock in all their various branches, nor with the manner of exhibiting the various articles presented at their exhibitions. It is called upon collectively and individually, to use every effort in their power (not by the use of their funds), to improve our present, and extend into all parts of the State facilities, for transporting the produce of the farmer and manufacturer to market, and extend agricultural education into all the different schools of the day.

In the neglect of these, you have the great cause of the agricultural delinquencies of the day. Though a few successive years have witnessed great improvements on the highways and facilities for transporting their produce to market.

It is not long since the Indian path was the only way to market, but this soon gave place to an open way on which a wagon could pass from this to the Genesee and back in a month. But the spirit of our forefathers could not endure such a tardy way, and this like the Indian path had to give way to the more improved road or turnpike. This was then the perfection of roads; and Buffalo, the now great city of the west, was brought as near to this, as Genesee was on the former road. Yet with this improvement the cost of transporting the products of the soil from 150 miles west of this city, was frequently equal to the value of the article at the place of embarkation. This was a grievous tax. Fortunately for the State there arose at that period a few master spirits, who conceived and grappled with the project of the Erie canal.

This great enterprise met with continued objections. The opposition to this project was so great and the spirit with which it was opposed and advocated, broke up the two great political parties of that day.

At this time, your speaker was on one occasion a listener to the argument of two distinguished men of that day. After trying to

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convince each other of the fallacy of his reasonings, the argument ceased with this prophetic annunciation by one of them, in these words, "Let the canal go on to its completion, and my word for it, you may begin and build another along side of it, and you will have plenty of use for both." Such was the language of the departed Gideon Granger.

It may be thought by some present, that any remarks upon the enlargement of the Erie canal and the other internal improvements of the day, are foreign to an agricultural address. I do not intend to enter into a lengthened discussion upon this subject. But inasmuch as the farmers generally have an interest in enjoying increased facilities for marketing their products, I deem it of some importance that an expression by us should be made on this subject. Of all persons, the farmers are most benefitted by the canals. They form a large portion of the inhabitants, and the products of the earth raised by them, form a very large portion of the wealth of the State.

The freehold property pays four-fifths, and if the city of New-York be omitted, five-sixths of all the taxes assessed. The farmer then has a direct interest in marketing his produce and receiving the necessaries of life from our great cities, at as small an expense as possible. At the business season of the year, the farmer of western New-York pays indirectly 15 to 20 cents per bushel to get his wheat to an eastern market. The pressure of business on the canal during the fall season is so great, and the capacity of the canal so inadequate to the business seeking that channel for a market, that his produce is so much lessened in value. I ask then, has the farmer nothing to complain of, touching the policy of the State? I say much, very much.

By increasing the capacity of the canal, these indirect taxes upon the farmer will not only be in a great degree less severely felt than at present, but the commercial business of the State then will be more extensive and give employment to many more persons, and requiring a larger demand for agricultural products. And what I have said of canals is true of all the present means of transporting produce to market. This State is destined to be the great agricultural, manufacturing and commercial State of the Union, and the

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day is not far distant, when her power as a manufacturing State will be witnessed and felt. No other State has facilities for manufacturing equal to New-York. Her canals and railroads are branching in every direction. The facilities for reaching the markets, are increasing and will be until every part of the State shall have fully developed her resources, and contribute its share to the aggregate wealth of the State, and the happiness of her people.

The Erie canal has contributed her portion beyond estimate towards this desirable object. The facilities which the present Erie canal has afforded, has lined its borders with mills and manufactories, which would never have had an existence but for this canal. Above all its importance is felt by its inability to do the business now pressing it, from home and abroad. Its revenues are enriching the State, and why should not the State propose to do the business which is destined to flow through it. The receipts for tolls are now beyond the estimate of its warmest friends. In 1825, when the canal was completed, her tolls were $500,000. In ten years, $1,482,000, and now twenty, they are nearly $3,000,000. The same ratio for 20 years will make over $12,000,000. And thanks to the new constitution, it has provided ample means for its immediate enlargement. And when enlarged, it will bring into the Treasury a revenue beyond any anticipations. This will give the State the means of extending its munificence into all her distant parts. Common schools, academies, colleges could then receive unlimited assistance, and who is there that would not rejoice to see the day when the State should possess the means of giving to every citizen the highest grade of education. Then, too, the agriculturist would not be behind his fellow citizens in education or acquirements. Then, too, the agricultural and mechanical productions of the State would escape the exactions of the present tolls. Every part of the State would then feel an equality, though their markets were at a distance. Who then has a greater interest that this should be the policy of the State than the farmers? It would elevate them and bring to all, the untold blessings of enjoying a rich reward for their labor, and of rearing their families in a land over which in every direction, the streams of education, refinement and civilization, will continually flow.

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Though we have occasion to rejoice that the science of agricultural improvements is yearly receiving an increased attention from the community, yet I earnestly hope the day is not far distant, when agricultural chemistry, botany and other knowledge of the science, will be pursued and taught in all our common schools, academies and colleges. The farmer's education is incomplete, without a perfect acquaintance with all the detail and relation of agricultural science. And it should be as thoroughly and systematically studied as any of the branches of a good common school education. To the farmer, such knowledge is of vast importance, and no young man, whether he be destined for the farm or the walks of an active business or professional life, should feel such a study unimportant. I would give this science a prominent place in our academies, and I humbly think that if the young men in our colleges spent half as much time in studying the various departments of this science as they do in learning the Latin and dead languages, they would come forth better practically educated than at present. That even they themselves would in after life not only acknowledge and impart to others the benefit of the knowledge thus acquired, but also bear ample testimony to the community, of the pleasure and value of the study of agricultural science. Young men would then be prepared to enter upon the business of an active farmer with just anticipations of increased pleasure, profit and usefulness in their profession. And if the State, which has freely dispensed its bounty to the cause of general education, would only now take *this* matter into consideration, and extend to it a helping hand, it would, in a few years, be fully repaid by the great advance in agricultural knowledge among the people, and in the augmented produce of the earth.

Let, then, the farmer be an educated and *intelligent* man, thoroughly versed in the science of his profession, pursuing his avocation under the smile of an approving Heaven, with a sound mind in a sound body, daily breathing the pure and wholesome air of freedom, continually moving amid the beauties of nature, and daily witnessing its wisdom and mysteries, possessing a soul alive to virtuous aspirations, and daily sending forth to his Maker the feelings of a heart overflowing with gratitude, that his life is so full of bless-

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ings unmerited. And the institutions of our country shall stand, having within its borders a defence against foreign foes, more powerful than all fortifications, and against enemies within, of more avail than standing armies.

On motion of J. S. Wadsworth,

Resolved, That the thanks of the society be tendered to the President, J. M. Sherwood, Esq., for his valuable services to the society the past year, and for his appropriate and interesting address, and that he be requested to furnish a copy of his address for publication in the transactions of the society.

AGRICULTURAL COLLEGES.

Mr. Chandler, of New York, called up the resolution offered by Mr. Viele, in favor of the establishment of agricultural schools connected with experimental farms.

Mr. Viele thought it would hardly be necessary, to offer many remarks in support of his resolutions. But he would say, that it was a well known fact, that by agriculture the great mass do live and accumulate wealth. It is also well known, that all our great schools have been created and endowed, not to promote agriculture, upon which they depend for support, but to educate our young men in the general sciences. The farmers need an institution to promote that great interest which is peculiarly theirs. The influence which surrounds our academies and colleges, rather tends to lead our young men *from* industry than *to* it—to professions, already bubbling and boiling over, than to a life of honest, productive industry. It is too often the case, that many who seek distinction in the professions, become paupers rather than useful men. It is a fact, that we have hundreds of young men in our cities, whose fathers have earned wealth for them, who, if such institutions as he proposed were in existence, would rush into them, and become useful and honorable men. How much of blessing would result from this, to individuals and to the public. He trusted that the day was not far distant, when

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New-York would be able to point to an institution calculated to elevate and improve her agricultural population. Mr. V. dwelt, at length, upon these several points.

Mr. Allen deemed the proposition so palpably right, and it had been so well enforced, that he deemed no further debate necessary to secure favorable action upon these resolutions from the society, and perhaps from the Legislature.

Mr. Chandler, of New-York, sustained the resolution. It was true, as had been said, that our cities were swarming with young men whose parents could, and desired to give their son's an agricultural education. Many did so now—sent their sons to Scotland to obtain this practical education. Thousands would seek an institution like that contemplated by this resolution, if it were established. The Legislature should take up this subject, and establish such a college. It would be a blessing to the State. He hoped the resolution might pass.

Mr. Clark, of Washington, doubted the policy of agitating the subject at this time. The Legislature had too much pressing business on hand at present, to act properly upon this subject. Appropriations were desired for our county agricultural societes and for the State Society, and he doubted whether, at this time, it would be prudent to urge this subject.

Mr. Wadsworth concurred in this remark. If he thought any thing could be done now, he would most zealously press this subject. But he thought nothing could be accomplished this year, and was of opinion that the resolution better be laid upon the table.

Mr. Viele hoped not. He wished to keep this subject before the people. It would do no harm to press this resolution, even though no legislative action immediately followed.

Mr. Allen was of the same opinion. It was true, that much was to be asked from the Legislature the present year; but he thought it time, this subject was pressed home. Much time and money was wasted in our colleges. Young men came out of them fully competent to answer any question in languages, rhetoric, poetry, &c., but who hadn't common sense enough to milk a cow. A different edu-

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cation was necessary—an education which would enable our sons to become men of common sense; with knowledge enough, and physical energy enough to get their bread and butter, in other than what were termed professional pursuits. He referred to the deep interest which is taken in Europe in the subject of agricultural science. To such length had it been carried, that it was necessary for a man to have a capital of $10,000 or $12,000, and a thorough knowledge of his business in all its branches, to successfully carry on a farm in England; but here, it is supposed, that if a man has an ax and a yoke of steers, no matter how ignorant he is, he is sufficiently qualified to successfully carry on the business of agriculture. It must become to be understood, that a little knowledge was necessary to be a good farmer.

To enforce the necessity of an agricultural college, Mr. A. alluded to the debauchery which too often followed the bestowment of wealth upon young men improperly educated. Immense misery would be avoided by young men afflicted with wealth, if their parents could give them a thorough, practical agricultural education. Such an education would create refined tastes; and instead of squandering their wealth, they would be found occupying the beautiful farms upon our beautiful rivers, living in peace and quiet to a good old age, instead of dying off prematurely by a city life of intemperance. Mr. A. further urged the passage of this resolution.

Mr. Mack alluded to the amount of money expended in schooling in this State; for schooling, not for education. Education was a very different thing from schooling; and it generally had to follow schooling. In what is called schooling, there is but little practical knowledge. He would not object to this money thus expended; but he did wish that some institution might be established in the State, combining practical knowledge with schooling. There were such schools in Europe—even in down trodden Ireland, and in despotic Russia; and these schools had an ameliorating influence. Such schools were needed here, schools which would combine study with labor. Mr. M. did not believe any harm would result from an expression of the opinion of this society upon this subject; and he hoped the resolution would pass.

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Mr. Wadsworth was not opposed to an institution of the kind contemplated; but he doubted, whether this was the time to have this subject formally passed. If the resolution was a mere expression of opinion, he would not object to it.

Mr. Cheever did not know that this resolution would do any harm, but would it do any good? It may be, that if all appropriations are to be reconsidered the present winter, the present is a good time to agitate this subject. Mr. C. was of opinion, however, that if the public felt the importance of an agricultural institution, it would be established by private enterprise. It was the felt necessity for them which had secured the establishment, by private enterprise, of Union, Geneva, Hamilton, and other colleges. After they were established, they were aided by the State; not before. Several efforts had been made to establish agricultural schools, but they had failed. Rich men would not send their sons to them, and farmers did not find it for their interest to do so. Such a school had been established and failed in Columbia county. He hoped, however, the time would come, when private enterprise would establish institutions of this kind.

Mr. Johnson thought that it would hardly be worth while to ask the Legislature to do any thing upon this subject now: and moved to strike out the third resolution, and add to the second the following:

"And that we believe the time has arrived which demands that this subject should receive more attention than has hitherto been given to it."

He was afraid of asking too much from the Legislature. It was important that the appropriations to the county agricultural societies should be renewed. This is to be sought. They were important, more important just now than any appropriation for an agricultural college. He was fearful the Legislature would say to us: "Gentlemen, you are asking too much." Mr. J. did not regret the millions expended for education. The liberties of the people depended upon the intelligence of the people. He would not take one farthing from our munificent school fund. It was a glorious fund, which should be fostered; and he trusted that under its influ-

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ence, the day would soon come when there would not be a citizen in the State who could not write his name.

Mr. Beekman deemed it proper for this society to give expression to its opinion upon this subject. But for the revulsions of 1836 and 1837, a charter would have been granted, and an agricultural school established in this State. Those revulsions postponed that enterprise; but it only postponed it; for he trusted that the time was coming, when such an institution would be successfully establish. Mr. B. alluded to the experiment in Columbia county. It failed, because it was not begun by a proper person. It was a speculation which all who knew anything of the character of the person who started it, knew could not succeed.

Mr. Clark, in allusion to some remarks which had been made, said he knew, that sometimes it was a misfortune to be poor; but he doubted, whether there was a man present who would not rather begin the world poor than rich. It is seldom that a rich man's son dies rich. It is the poor man's son, who acquires wealth to be enjoyed in his old age. It is the energy which poverty gives which makes men successful and great. He was, however, decidedly in favor of institutions of a practical character, in favor of the institution of the character contemplated by these resolutions. But he was not as warmly in favor of donations to colleges as many were; because he did not believe they were always of practical utility. They partook too much of the character of the institutions of learning of the feudal ages. They were not up to the spirit of the times we live in; and he sometimes doubted the propriety of continuing donations to them. By withholding such donations, it would give them more of a practical, working character—infuse new life and energy into them.

As modified, the resolutions were passed unanimously.

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PERPETUAL LEASES.

Mr. Viele offered the following resolution:—

Resolved, That the existence of perpetual leases, covering large territories of farming lands, is an evil alike prejudicial to agricultural improvements, and to the advancement of the moral and intellectual condition of the population.

Mr. Viele sustained his resolution, by referring to the history of those portions of the State where perpetual leases existed. They operated injuriously upon the country; prevented that improvement which was demanded by the spirit of the age; repressed enterprise, and were of a general demoralizing and anti-republican character.

Several gentlemen expressed the opinion, that this was not a subject legitimately belonging to the society.

Mr. Allen was of this opinion, and wished the gentleman might withdraw his resolution. But still he was willing to have it acted upon; for as he lived in a region of the State happily free from such drawbacks upon agricultural prosperity, he had nothing to fear either from voting for or against the resolution. He stated further, that it was a subject less necessary to be acted upon now than formerly, for the new Constitution had wisely provided that no leases should, hereafter, extend for a longer period than twelve years.

A motion was made to adjourn, which prevailed; and

The Society adjourned for one year.

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NEW-YORK STATE AGRICULTURAL SOCIETY.

The executive committee met at the Society's Rooms on the 22d January.

Present—George Vail, President; Samuel Cheever, Caleb N. Bement, and William Buel, Vice Presidents; J. S. Wadsworth, A. Van Bergen, J. M. Sherwood, and B. P. Johnson, Ex-Presidents; Joel B. Nott, Corresponding Secretary; Luther Tucker, Recording Secretary; J. McD. McIntyre, Treasurer; J. T. Blanchard, T. J. Marvin, and W. A. Beach, Executive Committee.

Mr. Tucker tendered his resignation as Recording Secretary.

On motion of J. S. Wadsworth,

Resolved, That Mr. Tucker's resignation be accepted, and that the thanks of the Society be most cordially tendered to him, for his long and valuable services as Recording Secretary of the Society.

B. P. Johnson, of Oneida, (on motion of J. S. Wadsworth,) was appointed Recording Secretary, in the place of Mr. Tucker, resigned.

It was resolved, that weekly meetings of the friends of agriculture, for the discussion of agricultural subjects, be held at the Capitol, during the session of the Legislature, and that Mr. Howard, Mr. McIntyre, and Mr. Bement, be a committee to make preparations for the meetings.

The Recording Secretary was directed to employ a competent reporter for these meetings.

A communication was received from D. B. Stockholm, Esq., of Ithaca, on the preparation of a manure called the "*Chemical guano*," which was referred to Messrs. Johnson and Bement.

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AFTERNOON SESSION.

The President presented a communication he had received from the Hon. Luther Bradish, of New-York, declining, on account of private engagements and the state of his health, his appointment as a member of the executive committee.

On motion of Mr. Buel, of Monroe, Mr. Ambrose Stevens, of New-York, was appointed a member in the place of Mr. Bradish.

EXECUTIVE COMMITTEE, 1847.

It is a matter of congratulation to be enabled to record the continued advancement of the agricultural interest in our own State, and in this country generally. That there has been a gradual improvement in the various departments of agricultural industry, cannot, we think, be questioned. The condition of our farms, the increased crops which are raised, the multiplication of choice animals, the perfection to which many of our dairy men have attained in the manufacture of cheese and butter, all tend to show, that progress is making, and that of the most gratifying character. The continued increase of those who are interested in the operations of this Society, encourage its officers to make renewed efforts to extend far and wide the influences of the Society. The attention which has been given to the establishment of agricultural schools, for the instruction of those who are desirous of becoming acquainted with all that relates to good husbandry, is not among the least encouraging prospects of our day. That these establishments have not as yet accomplished all that could have been desired, is to be regretted. Still, the spirit and attention which has been aroused to the subject of agricultural education, is evidence, that the public mind begins to realize its importance, and it is to be hoped, that the time is not far distant when schools upon correct principles will be established, where practice and theory judiciously combined, will lead to the training up of multitudes of young men, who, with well matured minds, and with a fund of practical knowledge, will go forth to aid in the great work of improving our agriculture.

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It cannot be too frequently impressed upon the minds of our citizens, that agriculture, not only furnishes means of subsistence to the people, but it sustains our commerce, and every branch of industry, which must rise or fall, as the farmer is successful or otherwise, in the management of his affairs. While agriculture is on the advance, every other interest must feel its reviving and quickening influence. We would urge these considerations upon those who are sometimes at least disposed to object to every application on the part of the agriculturists, as if their object was alone to promote selfish ends. We believe that nothing is further from the truth than this. As a body of men, we hesitate not to assert, that the agriculturists of our country are imbued largely with an open hearted and generous spirit, that desires the advancement and improvement of all the industrial interests of the country; and while they devote themselves to the improvement of agriculture, and earnestly urge the subject to the consideration of others, they expect to realize a rich reward, not only in advantage to themselves, but also in the general improvement and advancement of all the great interests of their country.

A distinguished writer has well said: "The labor of the farmer gives employment to the manufacturer, and yields a support for the other parts of the community; it is the spring which sets the whole general machine of commerce in motion; and the sail could not be spread *without the assistance of the plow*. Of nations, as of individuals, the first blessing is independence. Neither the man nor the people can be happy, to whom any human power can deny the necessaries or conveniences of life. There is no way of living without the need of foreign assistance, but by the products of our own lands, improved by our own labor. Every other source of plenty is perishable or casual. By agriculture only can commerce be perpetuated; and by agriculture alone can we live in plenty without intercourse with other nations. This, therefore, is the great art which every government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve."

There can be little doubt that there is a growing importance attached to the introduction of science in its application to agriculture. The facts which come to our knowledge, of the great bene-

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fits which have resulted to the agriculture of England and Scotland by the application of science, has already exerted an extensive influence upon many in our own country. It has led to the establishment of professorships in two of the leading institutions of this country, Yale and Cambridge; and it is a matter of no little pride that the professors who have been selected to preside over these departments, which we believe are destined to exert an influence that shall be felt for good in all time to come, are natives of our own State.

The one, J. P. Norton, has been appointed professor in Yale college, and from the thorough education which he has received in Scotland, and which he is now perfecting by a year's residence on the continent, with the most distinguished chemists, we have no doubt he will add much to the already high character of that excellent institution, which has long been the pride and boast of our sister State, and which has sent forth so many distinguished men, whose fame has not been confined to our own land, but has been co-extensive with the civilized world.

Mr. E. N. Horsford has received the appointment to the Rumford professorship, in Harvard University, at Cambridge, Mass.; and this we believe, is among the few appointments that have been made to that Institution, from residents out of their own New-England. Mr. Horsford has spent a long time in Europe; has received instruction from the distinguished German chemist, Liebig, who is at the head of his profession upon the Continent; and he comes with a mind richly stored with chemical science, prepared to impart it to the young men of America. From his labors we anticipate the most happy results.

We regret that the institutions of our own State had not secured the services of these gentlemen; but we rejoice that there are institutions in our own country, which feel the importance of making agricultural science, a part of the course of study which is to be pursued. The benefits which will result to the agricultural interests of our country, by the aid which can be obtained from analysis of soils, of grains, and in various other ways, through the labors of these gentlemen, none can fully estimate.

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Professor E. Emmons, of our own State, has contributed much to the agricultural interest, by the analysis of soils, which has enabled many of our farmers to understand more fully the nature of their soils, and more profitably to cultivate their farms; and he is now engaged in the analysis of fruit trees, grasses, &c., which will prove highly advantageous, not only to the farmer, but to all who are interested in the advancement of the agricultural and other interests of our State.

The volume which has already been prepared by him, as a part of the Natural History of the State is valuable, but the one in preparation, and which will be completed, probably the present year, is of much greater importance to the agricultural interest of the State, as it will contain the investigations in regard to soils, fruits, grasses, &c.

The executive committee, in entering upon their duties, feel that a deep responsibility rests upon them, and that upon a right discharge of their duties much depends. They are desirous of advancing the great cause of agriculture; and they ask the co-operation of the friends of agricultural improvement throughout the State. They look to the county societies for an ardent and zealous co-operation in the work, and they doubt not, that they will receive it at their hands. The manifest improvement which has taken place in this State, since the State Society was re-organized, and county Societies were established, is cheering evidence of the increasing importance which is attached to the subject, by the farmers of New-York.

But we would deeply impress it upon every mind, that as yet we are but on the threshold of improvement. We are just prepared to make experiments, that shall lead to practical and beneficial results; and so far as the officers of the society are able to do it, they intend to be more and more particular in their requirements. They intend to increase their list of premiums, and thus induce those who have the ability, to contribute to the great work which they have in charge. Investigations in husbandry, in fattening and rearing of animals, in ascertaining the nutritive qualities of various kinds of food, in producing an increased quantity of butter and cheese, all

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demand attention, and shall receive it so far as the means of the Society will enable us to accomplish them.

We would invite then, all classes cordially to co-operate with us. Give us the benefit of your counsels and your experience, make us familiar with your practice as farmers, so that we can spread the results before the public, and thus aid the great object we have in view, the advancement of the agricultural interest of our State.

The perfection of agriculture is to be accomplished by study and practice combined; and we rejoice that chemistry has been brought to use her mighty power to aid us. Let us not be unmindful of her resources and her power. Let us endeavor to ascertain the character of the soil we cultivate, the crops best adapted, the kind of manure best calculated to improve it, and we may expect ere long, that an adaptation of grain to soil, will be so perfected, that our land will yield an increase that shall gladden every heart, and add greatly to the wealth and prosperity of our country. The old world is crying aloud to the new for bread, and is sending her inhabitants by tens of thousands to our shores, to obtain subsistence and support. We rejoice that a kind Providence has filled our granaries, so that we can extend them relief in the hour of need, and that we can repay to Ireland, that kindness, which she, in the early history of our own country, extended with an Irishman's warmth of heart, to his suffering brethren in America.

But let us bear in mind, that if we would meet the demands, that will be made upon us, our interest as well as duty to others, urge us to improve by every means in our power, our agriculture, increase largely as we may, our crops and our productions, and thus show to all, that we are in truth and in fact the granary of the world.

On behalf of the executive committee.

B. P. JOHNSON.

Secretary.

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1846.

REPORTS OF COMMITTEES,

At the Annual Cattle Show and Fair of the New-York State Agricultural Society, held at Auburn, September 15, 16, and 17.

CATTLE.

CLASS I—*Durhams.*

The committee award as follows:

Bulls over three years old.

To J. M. Sherwood, Cayuga county, for his bull "Symmetry," 1st premium $15.

To W. R. Grinnell, Cayuga county, for his bull "Albion," 2d premium, $10.

To G. S. Button, Wayne county, for his bull "Osceola," 3d premium, diploma.

Bulls two years old.

To H. N. Carey, Oneida county, for his bull "Oregon," 1st premium, $10.

To John B. Packer, Saratoga county, for his bull "Tecumseh," 2d premium, Col. Tour.

Bulls one year old.

To Z. B. Wakeman, Herkimer county, for his bull "Young Meteor," 1st premium, $10.

To A. G. Percy, Wayne County, for his bull "Mayflower," 2d premium, Col. Tour.

To. J. W. Bacon, Seneca county, for his bull "Waterloo," 3d premium, diploma.

Bull calves.

To Geeorge Vail, Rensselaer county, for his bull calf "Oscar," 1st premium, Col. Tour.

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To. J. W. Bacon, Seneca county, for his bull calf "Seneca," 2d premium, diploma.

Cows over three years old.

To George Vail, of Rensselaer county, for his cow "Lady Barrington," 1st premium, $15.

To Edward Wells, Fulton county, for his cow "Venus," 2d premium, $10.

To J. W. Bacon, Seneca county, for his cow "Red Lilly," 3d premium, diploma.

Heifers two years old.

To H. N. Carey, Oneida county, for his heifer "Rose," 1st premium, $10.

To J. M. Sherwood, Cayuga county, for his heifer "Lalla Rookh," 2d premium, Col. Tour.

Heifers one year old.

To Z. B. Wakeman, Herkimer county, for his heifer "Sylvia," 1st premium, $10.

To Edward Wells, Fulton county, for his heifer "Cleopatra," 2d premium, Col. Tour.

Heifer calves.

To. George Vail, Rensselaer county, for his heifer calf "Willie 5th," 1st premium, Col. Tour.

To J. W. Bacon, Seneca county, for his heifer calf "Lady Jane," 2d premium, diploma.

All of which is respectfully submitted.

M. L. SULLIVANT, *of Ohio.*
L. CHANDLER BALL,
WM. H'Y SOTHAM

CLASSES II, III and IV.

The undersigned, a committee appointed to award premiums on Herefords, Devons and Ayreshires, make the following awards:

CLASS II—*Herefords.*

Bulls three years old.

1. T. H. Hyatt, Rochester, "Don Quixotte," $15.

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Young bulls.

1. Corning and Sotham, Albany, "Waxie," $10.

Cows three years old.

1. Corning and Sotham, Albany, "Matilda," $15.
2. do do "Anna," $10.

Heifers.

1. T. H. Hyatt, Rochester, "Emma," 3 years old, $10.
2. Edward Wells, Johnstown, "Lady Fulton," 1 year old, diplo.

CLASS III—*Devons.*

Bulls three years old.

1. Lewis F. Allen, Buffalo, "Red Rover," $15.
2. R. M. Remington, $10.

Young bulls.

1. Geo. A. Mason, Jordan, "Criterion," $10.
2. S. M. Brewer, Elbridge, "Mark Anthony," diploma.

Cows three years old.

1. H. N. Washburn, Butternuts, 9 years old cow, $15.
2. do do 10 do $10.

Heifers.

1. H. N. Washburn, Butternuts, 2 years old, $10.
2. Lewis F. Allen, Buffalo, "Violanta," 1½ years old, diploma.

The committee, in making their examinations, were much gratified with the fine display of *Devons* presented, many of which, although not the recipients of premiums, do great credit to the growers of this superior breed of stock. Their attention was particularly directed to a numerous collection of Devon calves, and they would especially notice a fine lot of about a dozen, owned by Mr. Washburn, of Butternuts. The committee would suggest that at future exhibitions, Devon calves be classed for premiums.

There is one fact, although not immediately connected with their duties, still the committee beg leave to notice it. In viewing the many fine working oxen presented, they were irresistibly led to the conclusion, that for sprightly and upright appearance, for strength and action, the Devons, or a cross from them, give a character that is all important for working oxen.

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The exhibition of Herefords was rather limited, being confined to the recipients of premiums. The cows presented, were of the first class, and the committee take great pleasure in saying, that they do great credit to their owners.

There were no Ayreshires exhibited.

All of which is respectfully submitted.

F. KINSMAN,
N. S. WRIGHT,
SAM'L HURLBERT.

Auburn, Sept. 17, 1846.

CLASS V—*Cross, Native and Improved.*

The committee appointed to examine and award premiums upon class 5, report: That the exhibition in this class was not such as could have been wished. They were few in number, and the most of them quite ordinary, though there were a few very fine animals. They award the premiums as follows:

Cows three years old.

2. H. N. Washburn, Butternuts, "Red Rose," "native and Devon," $10.

3. J. W. Bacon, Waterloo, "Betsey," Native and short horn, Vol. Trans.

There was no animal exhibited in this class which the committee deemed worthy of the first premium.

Two years old.

2. Enos T. Throop, Owasco, native and short horn, $10.

No others exhibited in this class.

Yearling Heifers.

1. E. T. Baldwin, Owasco, native and short horn, $5.
2. Geo. A. Mason, Jordan, "Hebe," Col. Tour.
3. S. M. Brown, Elbridge, "Eunice," Vol. Trans.

Heifer calves.

1. H. N. Washburn, Butternuts, for his calf "Red Rose," native and Devon, Col. Tour.

We recommend a discretionary premium, Vol. Trans. to John G. Wheeler, Sennet, for his two years old native and Devon bull.

IRA S. HITCHCOCK,
JOHN RANDALL.

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CLASS VI.—NATIVE CATTLE.

The committee award the first premium on native cows, to Ira Hopkins of Auburn,—$15.00.

2d. To Charles W. Brown, Sennet,—$10.00

The committee would remark in reference to this premium, that the appearance of the cow would not justify the award, but having three very fine calves at a birth, which were exhibited in excellent condition, the committee deemed it proper to reward the exhibitor.

A very fine cow was exhibited by Mr. Elon Sheldon, but as the cow exhibited belonged to grade animals, the committee could not award her a premium.

Yearling Heifers.

The committee award the first premium to George A. Mason, Jordan, for his heifer "Amy," $5.00.

2. Wm. J. Phelps, Owasco, Col. Tour.

A grade heifer entered and exhibited in this class, was not passed upon by the committee.

Best heifer calf, Nath'l. Lynch, Sennet, Col. Tour.

JAS. S. WADSWORTH,
CALEB BROWN,
Committee.

WORKING OXEN.

The committee on working oxen, report:

That in the discharge of their duties, they have had the pleasure of examining over 40 pair of excellent cattle, whose merits in many instances were so nearly equal, that it was with the utmost difficulty that your committee have been able to satisfy themselves where the real merit was to be found.

The Society's Premium of $25.00 for the best 20 pair of oxen from any one county, was not claimed.

The first 10 yoke of oxen examined, were cattle owned by individual farmers, from the town of Sennet, in this county, highly creditable to the taste and economy of their owners, showing the estimation in which ox teams are held by the intelligent and enterprising farmers of that town.

The next 10 yoke examined, were owned by Mr. J. M. Sherwood, of Auburn. In looking through this long array of fine cattle, your

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committee were highly gratified to find so many pair that would have done credit to any exhibition.

The last 10 yoke were owned by J. S. Wadsworth, of Geneseo. In reviewing these cattle, the committee were pleased to see so good a representation of the cattle from the far-famed flats of Geneseo, all remarkable for fine form and good handling properties.

The committee on working oxen, would award the society's premiums as follows:

To Jas. S. Wadsworth, the best 10 pair of working cattle, $20.00.

To J. M. Sherwood of Auburn, 2d best 10 pair, $10.00.

To Messrs. Sheldon, Fellows and others, of the town of Sennet, 3d best 10 pair, Col. Tour.

Best yoke of oxen, to Mr. E. Sheldon, of Sennett, $15.00.

Second best, to Mr. J. S. Wadsworth, of Geneseo, $10.00.

Third best, to J. M. Sherwood, of Auburn, Vol. Trans.

In conclusion your committee would say, they found but few pair of single cattle on the ground; amongst them they noticed a pair of spotted cattle, owned by Mr. H. N. Carey, from Oneida county, well worthy of notice.

W. FULLER,
THOMAS KINGMAN,
JOHN AYRAULT,
Committee.

STEERS.

The committee on steers of different ages, from three to one year old, report:

That nine yoke of three year old steers were presented for examination, all of superior excellence. In selecting the best yoke, the committee were divided; but on the other awards, the committee are unanimous.

Three years old.

1. J. Boies, Homer, Cortland co., $10.00.
2. J. S. Wadsworth, Geneseo, $5.00.
3. Wm. Hayden, Mentz, Diploma.

Two years old.

1. Elon Sheldon, Sennet, $10.00.
2. J. Boies, Homer, Col. Tour.
3. Amos Barnes, Sennet, Vol. Tr.

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One year old.

1. Herod Otis, ——— $8.00.
2. J. Boies, Homer, Col. Tour.

The committee would report that one pair of steers were presented, which were trained by a boy, which were of small size, but of good quality, and entitled to the first premium.

All which is respectfully submitted.

GIDEON RAMSDELL, *Chairman.*
FRANCIS HIBBERD,
HIRAM CLIFT.

FAT CATTLE.

The committee on fat cattle, in making their report, cannot help expressing their surprise that so few specimens in this department were offered The number however, being so limited, rendered the duty of the committee very trifling, but in the discharge of it they have to express their admiration of two pair of cattle of uncommon size and beautiful form, altogether the finest cattle, had they been longer fed. But as the committee were bound to award the prizes according to the condition of the animals, they have determined as follows:

Pair of oxen.

1. J. Boies, Homer, Cortland, $15.00.
2. do do do $10.00.
3. A. Pine, Rensselaer Co., Colman's Tour.

Single Ox or Steer.

1. Geo. T. Oliphant, Mt. Morris, a very fine steer, $10.00.
2. Henry Willard, Cayuga, $5.00.

Cows.

1. James S. Wadsworth, Geneseo, $10.00.
2. do do do $5.00.
3. do do do Vol. Trans.

Three very fine animals.

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Fat Sheep.

1. F. W. Collins, E. Bloomfield, $10.00.

E. THOMSON,
Canada West, *Chairman.*
A. S. FREEMAN,
Onondaga co.
GEORGE FORDON,
Ontario co.

HORSES.

Classes I & II.

The committee on horses (classes 1 and 2) beg leave respectfully to report, that after mature and careful examination of the animals brought forward, and having bestowed all the pains which time and circumstances would permit, they have awarded the premiums as follows:

Stallions for general purposes.

1. E. Fuller, Canandaigua, "Bucephalus," $10.
2. Caleb Jasper, Marcellus, "Sir Henry," $5.
3. Isaac Fairchild, Cortland, "American Bay," diploma.
4. Joseph Morrison, Ledyard, "Turk," vol. Trans.

It has been a subject of regret to the committee, that several very fine animals must, upon this occasion, go without their reward.—Among these are to be noticed, Young Alfred and Duroc, with some others.

The committee having found some difficulty in bringing colts into fair competition with horses of mature age, recommend the following uncommonly fine animals for extra premiums:

1. George Fordon, Geneva, "Perfection," vol. Trans.
2. Reuben Tift, Veteran, Chemung co., "Black Prince," do.
3. Cyrus Breed, Oswego co., "Golden Farmer," do.

Brood Mares with foals.

1. Daniel A Monroe, Camillus, $10.
2. E. H. Howland, Venice, $5.
3. Joseph H. Stanley, Cazenovia, diploma.
4. J. Boies, Homer, vol. Trans.

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Brood Mares without foals.

1. Joseph Mabbit, Skaneateles, $10.
2. Abner Hollister, ————, $5.
3. B. F. Bonney, Hamilton, Madison co., diploma.

Draught Stallions.

1. Benj. Petit, Bridgewater, Oneida, "Honest Tom," $10.
2. S. F. Sellen, Lansing, Cayuga, "Young Emigrant," $5.
3. W. Colquhon, Cornell, Canada, diploma.

A very fine colt, Young Alfred, 3 years old, was disqualified being under age, but was a colt of very superior figure and action.

The fine animal, *Old Alfred*, imported from England, and well known in the Genesee country, was brought under the notice of the committee, not as competing for a premium, but as challenging that approbation and notice which he so justly deserved.

Two horses were exhibited which the committee consider worthy of special notice. A stallion of the ancient Vermont *Morgan Breed*. This animal displayed the full vigor and action of youth, although he has attained the age of 20 years. A colt got by him and of the same family, was also well deserving of commendation. These horses did not come exactly under the classes submitted to the committee, but they trust that their claims will justify the notice now taken.

It is the pleasing duty of the committee to report in the most favorable terms of the stallions brought forward. They were almost without exception, of the very best description, admirably calculated to raise those noble and useful animals, which in spite of all that opposition can do, will ever continue a source of the highest utility, enjoyment and pride to the farmers of New-York.

It is with some reluctance but under a sense of duty that the committee remark, that the mares in general were inferior to their expectation, and that they can hardly be accepted as a fair sample of the farmers' mares in this State. It is an imperious duty to himself and to the society, that the farmer should produce on such great occasions as the present, any superior animal which he may have the good fortune to possess, more especially in a description of stock so easily transported; and they hope the remarks now ventured upon will be well received, and produce at future exhibitions some favorable results. It is also incumbent on the committee to observe, that no fixed rules seem to be acted upon, in regard to mares having colts at their foot. If there is difficulty in enforcing this rule, it would perhaps be better to divide mares into two classes, with and without foals; as it is evident that a mare in high working condition, and a mare suckling a foal, cannot compete on equal terms.

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Before concluding this report and at the risk of being considered tedious, the committee would beg leave to call the attention of the Society to a very important subject, intimately connected with the prosperity of farmers.

Veterinary Surgery has become a subject of the deepest interest in every civilized nation of Europe, and the scientific attention of the first physiologists and anatomists of the age, has been directed to its cultivation and improvement. The chairman of this committee superintended for many years the rise and progress of a veterinary school, in his capacity of a director of the Highland and Agricultural Society of Scotland, which established such an institution.

That country has derived the highest benefit from the school, under its talented teacher Professor Dick. A large number of students from all parts of Great Britain and Ireland, attend his lectures and practical school in Edinburgh, and are sent forth in due time with diplomas granted upon strict public examinations, by the medical professors, by gentlemen of Edinburgh and by agriculturists. These diplomas, it is sufficient to say, are received on equal terms with those of the London College in pursuing veterinary surgery for the British army, while a host of intelligent, well educated young men are supplied to the farmers in all parts of the country.

This matter appears to the committee well deserving of early attention, and well worthy of the efforts of this great association, and it is quite within its means to accomplish. The establishment of a veterinary school in this State, would prove a mighty boon to the owners of the valuable fine stock for which New York is so justly celebrated. A disease of a most alarming description, is loudly reported to be ravaging Long Island, and may peradventure spread through the interior. As matters stand at this moment, such a misfortune will too probably be met with improper treatment, or by apathy and despair. It is evident, that if every county in the State had engaged the services of a practitioner, as well acquainted with the anatomy and physiology of the horse, cow and sheep, as medical gentlemen are with the human frame, the frightful advance of contagious disease would be either arrested or put down.

One other point suggests itself to the committee, which they approach with some diffidence, feeling that in touching upon it they rather exceed their commission. Trusting however to a liberal interpretation of their motives, they would respectfully submit for the consideration of the Society, whether it would not prove a benefit and satisfaction to all concerned, that the horses (at any rate) should be deliberately and quietly examined and judged upon the day preceding the general attendance of the public. It is unnecessary to

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say more than to call the attention of the Society to this point, as one which, in the opinion of the committee, would be followed by favorable results.

All of which is respectfully submitted.

ADAM FERGUSSON,
Chairman.

BLOOD HORSES.

CLASS III.

The committee appointed to examine blood horses, mares and colts, have performed the duty assigned them, and beg leave to report:

Several horses of high blood were presented for examination, and after mature deliberation and close examination of said horses and their pedigree. The committee award as follows:

STALLIONS.

1. Edward Long, Cambridge, Washington county, "Sir Henry," ---------- $10
2. J. W. Holmes, Chautauque county, "Busiris,"---- 5
3. Nelson Little, Lodi, "Culpepper," ---------- Diploma.
4. Wm. Ferguson, Oneida Co., "Kentucky Hunter,"- Trans.

These horses fully sustained the character of thorough bred. A horse called Virginia was offered to the committee as a thorough bred, but the owner not having a pedigree, he was passed by the committee; yet, as from his whole form, action and appearance, he possesses and has a remarkable show of thorough blood, we suggest a discretionary premium.

The committee were particularly struck with the form, style, action and perfect development of a colt, two years old, called "Young Emperor," and although no premium is offered for animals of that age, they have assumed and award a premium of $10 to the owner of this colt, which your committee consider as unsurpassed.

John H. Gardiner, "Young Emperor,"---------- $10 00
Ira McGonnegal, "Virginia,"---------- 5 00

Your committee have also awarded to the three year old horses as follows:

1. Wm. R. Grinnell, Cayuga, "Champion,"-------- $10 00
2. Henry Tully, Tyre, Seneca county, "Bertrand Eclipse,"---------- 5 00

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3. Isaac Fairchild, Cortland county, "Beppo," ------ Diploma.
4. J. C. Burdict, Truxton, Cortland Co., "Mambrino," Trans.

The committee beg leave to remark, that between the horses Champion and Bertrand Eclipse, there is very little choice, but the great performance of Champion, at 2 years old, to wit, one mile in 3 min. and 5 sec., entitled him to the first premium.

The mares presented were few.

The committee award:

1. Joel B. Nott, Albany, ---------- $10 00
2. Isaac Fairchild, Cortland county,---------- 5 00
3. G. Howland, Owasco, Cayuga county,---------- Diploma.
4. J. W. Coapeman, Aurelius, " ---------- Trans.

The attention of the committee was called to a pair of matched 2 year old colts, and were much pleased with their form and action, and recommend a discretionary premium to the owner. Several fine colts were also produced and examined, and had power been in the committee, premiums would have been given to several of them.

On the whole, your committee were highly gratified at the exhibition of thorough bred horses, mares and colts, and as they well know that "blood will take," they hope to see the best results from this highly interesting exhibition.

Auburn, 17th Sept., 1846.

JNO. TAYLOR COOPER, *Ch'n.*
ALEXANDER O. SPENCER,
THEODORE S. FAXTON.

MATCHED HORSES AND GELDINGS.

The committee on matched horses and geldings, would respectfully report:

They would in the first place remark that the number of specimens were numerous; some of them of much excellence, and others below mediocrity.

The committee would with due deference to the opinion of others, remark, that they discovered a want of that powerful action (in many) that constitutes what may be termed the roadster. It is both important and desirable, that horses should be able to do their ten or twelve miles per hour, with apparent safety and ease. We live in the age of improvement, and go-a-head appears to be the order of the day. Our steamboats and railroads must excel in speed. Our lightning lines must convey information as quick as thought, and that

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beautiful animal the horse that conduces so much to the comfort and convenience of man, carrying where steamboats and railroads cannot and will not carry us, must be able to go the pace and distance.

The committee would further recommend to breeders as the result of their experience and observation, a strong cross of such horses as old Messenger, which has contributed so largely to improve our breed of horses, for the experience of ages past most conclusively proves, that it is only to the large powerful thorough bred horse, that we can look for lasting and valuable improvement.

The committee award as follows :

1. Amos Lewis Dryden,---------- $10 00
2. W. A. Dutcher Milo,---------- Diploma
3. Olney Gould, Gaines,---------- Vol. Trans.

Mr. W. H. Cheney, of Rochester, presented a very fine pair of horses which attracted the attention of the committee, but they were presented too late to come within the rules.

ON GELDING HORSES.

1. Premium, Arden Merril, Rome, Oneida,---------- $5 00
2.
3.

N. B. Mr. Dutcher, one of the committee on matched horses, having presented a pair for competition, did not serve or act in that station.

Very respectfully,
EDWARD LONG,
WAIT H. DAVIS,
W. A. DUTCHER,
Committee.

September 17th, 1846.

SHEEP.

LONG WOOLED.

The committee upon long wooled sheep, class No. 1, respectfully report:

That they have examined all the sheep of this class offered for premium, and they regret that so few were presented of a kind so important in the sheep husbandry of this State.

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Those presented, were of the New Leicester or Bakewell, and the Cotswold varieties. One lot of ewes was presented, the stock of which, the owner said, he imported from Devonshire, but they were evidently of the New Leicester family.

Mr. William Van Heusen of the town of Champion, Jefferson co., brought on to the ground, one buck and three ewes of New Leicester, from the stock imported by Mr. Langdon, of Lower Canada. They had not been shorn this season, and their wool was of great length, that on the buck measuring, in some parts, over 14 inches.

As five ewes were the smallest number which could compete for a premium, by the regulations of the Society, he could only enter his buck.

The committee award the premiums as follows:

For the best coarse wooled buck, the first premium of $8, to William Van Heusen, of Champion, Jefferson county.

For the second best, they award one set of Colman's Tour, to William H. Sotham, of Albany.

For the third best they award a diploma to Lewis F. Allen, of Black-Rock.

For the 5 best ewes, Cotswolds, they award a premium of $8 to William H. Sotham, of Albany.

For the second best 5 ewes, one set of Colman's Tour, to Lewis Taylor, of Skaneateles, Onondaga county.

For the third best 5 ewes, Cotswold, a diploma, to Hon. William Buell, of Rochester.

For the best pen of 5 lambs, Cotswold, a premium of $5 to Lewis F. Allen, of Black-Rock.

S. CHEEVER,
AUGUSTUS RAYNER,
EDWIN L. GAGE,
Committee.

September 17th, 1846.

MIDDLE WOOLED.

After an examination of the various sheep entered in this class, the committee award the premiums as follows:

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Best Buck.

1. Z. B. Wakeman, Herkimer, $8.
2. J. M. Sherwood, Auburn, Col. Tour.
3. do do diploma.

Best Five Ewes.

1. J. M. Sherwood, Auburn, $8.
2. Z. B. Wakeman, Herkimer, Col. Tour.

Best Five Lambs.

Z. B. Wakeman, Herkimer, $5.

EDWARD H. SMITH,
BENJ. ENOS,
ROBERT HADFIELD,
Committee.

MERINOS AND THEIR GRADES.

The committee appointed to examine and award the premiums on Merino sheep and their grades, have attended to that trust, and beg leave to report: That they have examined the several lots of sheep mentioned in the schedule, furnished said committee, and so far as they could judge from the dirty condition of the wool, they have awarded the Society's premiums as follows, to wit:

Best Buck.

1. Joseph Blakeslee, $8.
2. J. L. Randall, Col. Tour.
3. William Howard, diploma.

Ewes.

1. J. M. Sherwood, Esq , $8.
2. J. L. Randall, Col. Tour.
3. William Howard, diploma.

Lambs.

Best five lambs, R. Burritt, $5.

Your committee found some difficulty in discriminating between the animals, and the condition of the fleeces had considerable influence with them in arriving at a decision, believing it to be very

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much for the interest of the Society, as well as the grower, that it should be as free from waste as the process of cleansing on the sheep will admit; and your committee would recommend to the growers of wool, that they wash their sheep twice, the second time on the day succeeding the first washing. Your committee have much confidence in that recommendation, from the fact, that one of their number, who is a pioneer in the business, has practiced that method for a long time; and from the fact, that it requires wool and not dirt to make cloth, and that it is very difficult to deceive the purchaser.

SAMUEL D. COLT,
NATH'L B. SMITH,
DANIEL S. CURTIS,
Committee.

On Saxons and their Grades.

In the absence of your chairman, Mr. Hildibrand, the committee on Saxons, previous to reporting the premiums awarded, beg the society's indulgence, while they present a few hasty remarks.

In the list of the various animals brought to our view, we discover that sheep occupy a conspicuous position. We are aware of the importance of the ox and the cow. Nothing enriches the landscape more than to see those blooded animals, the Durhams, the Herefords, the Devons and Ayrshires, sprinkled over luxuriant pasture, bordering on some lovely stream.

The horse in his splendid career always attracts our attention, moving as if motion were ever a new and delightful sensation, we gaze at him with rapture, we gaze again and pronounce him the noblest animal on earth. But when we take into consideration the nature, character and habits of that defenceless animal the sheep, surrounded by all of its soul subduing associations, leading us back to the primitive simplicity of pastoral days, enabling us to hold converse with the Patriarchs ; and from thence following it along the lines of time up to the present, and when beholding the valuable improvement made upon its fleece, we are compelled to say, that it occupies no ordinary position in the catalogue of domestic animals.

Animals like man need to be cultivated; and like man, the greater the improvement, the more interesting they are. This holds good in sheep. As you descend far in the scale of excellence, you find them unruly, they are barbarians, while in summer when nature provides bountifully for them, they will shun you upon the mountains as they

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would "the appearance of evil;" compelling you in the erection of their enclosure to have an eye to stability and height, for they will all but overleap imagination, while the Saxon will follow you as an affectionate child, and requires but to know its bounds.

Perhaps there is no animal more grateful to the hand that ministers to its wants, than the thoroughly domesticated sheep. Listen to its plaintive cries as you approach it through fields of snow in winter, and having distributed liberally unto it, it fills its mouth with gladness, and looks up to you as its God, for it knows no other, exhibiting a degree of thankfulness, putting the christian to the blush. The sheep is an animal that is full of benevolence, poetry and reality; it not only bestows upon man its superfluous clothing to protect his body from the inclemency of the weather, but confers its flesh without a murmur as a nutricious article of food. Show me the animal that confers so much in its benevolent contributions to the comfort and actual wants of man. It not only teaches him meekness, that heavenly lesson, but when naked, it clothes him, and feeds him when hungry, amply repaying for all his care and kindness.

The very intelligent and interesting history of the rise and progress of the Saxon, written by the late and much to be lamented Henry D. Grove, is familiar to all, and therefore we shall not repeat it.

It is not at all surprising, that a difference of opinion should exist with regard to the comparative excellence of the different varieties of sheep. Arguments have been frequently advanced for and against, by much abler hands, therefore it would be useless to attempt it, even if our space would admit. Yet if we may be allowed to give our opinion, founded on experience and close observation, we would be compelled to say, that where the fleece is the object rather than the flesh, and where the varieties are equally judiciously attended to, that the Saxon is the more profitable.

We are aware, that many object to the Saxon, in consequence of the delicacy of the animal, but it is always to be remembered, the more delicate the animal, the more interesting the charge, and with the high utilitarians, if the more profitable is the result of the charge, it most assuredly will do away with the objection, and such we believe to be the true state of the case. So long as a portion of our people move in the higher walks of life, so long fine fabrics will be in demand; and there is no good and sufficient reason why America shall not grow the finest of wools; yes, and manufacture them too, so long as Americans *will* wear them. The question is, whether we shall lose the valuable improvement made on the fleece of this interesting animal, or in other words, shall we exchange the silky coat

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of the Saxon, for the shaggy one of the oriental. No. Until the eyes of the babe appear in the rear of its head, instead of its forehead, our march is onward ; we have only to hold out the appearance of profit to the capitalist. And what is the result, he readily embarks in the manufacturing of this rich material, he pursues it with all that energy, skill, tact and Yankee ingenuity, which characterizes the New-Englander ; another and another follow, giving rise to competition for the raw material, which always enhances the price. It is then, that the "Saxon Tree" will flourish in our goodly soil ; the fruit thereof will not only be pleasant to the eye, but will swell the pockets of individuals, by bringing in a rich reward of dollars and cents.

Yet it is for us to decide (so long as we have a surplus of the raw material), whether we shall clothe ourselves, or depend upon foreigners for *rags* to cover our nakedness. Rather than to degrade our national character of independence, by coveting foreign fabrics, and aping after foreign fooleries and foreign fopperies, until a permanent nationality of character becomes a mere bubble; rather let us become as one man, and not only profess to be American, but put that profession into practice, by zealously fostering American industry and American skill, until the hum of merry voices, the sound of the hammer, and the rattle of the shuttle, shall be heard in connection with the roar of every waterfall. It is when we live within ourselves, that we are independent indeed; it is then that we can join the happy farmer, in the independent sentiment expressed in the old song:

I'll eat *my own* lamb, my own chickens and ham;
I'll shear *my own* fleece, and I'll wear it.

Your committee, in discharging the duty assigned to them, in deciding the comparative claims of those who have presented their specimens for competition, cannot fail to express the very high gratification at the excellence of these, and fondly flatter themselves, that ere long, a production so intimately connected with the agricultural, manufacturing, and commercial prosperity of our country, will be duly appreciated, and therefore, with pleasure, we declare the premiums awarded.

Best buck,	S. B. Crocker,	Vernon,	Oneida,	$8 00
2d best, 5 ewes,	"	"	"	Col. Tour.
3d " 5 ewes,	"	"	"	Diploma.
Best 5 ewes,	S. H. Church,	"	"	$8 00
2d best buck,	"	"	"	Col. Tour.
3d " "	"	"	"	Diploma.

DANIEL ROGERS, *Ch'n.*
WM. McKIE,
THOMAS W. SWIFT.

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The committee on stapling find their duties very limited, owing to the small quantity of wool offered for examination, lot No. 19 being the only fleeces presented. The owner is entitled to much credit for the condition as well as quality of his wool; belonging to Sam'l H. Church, of Vernon, Oneida county.

H. BLANCHARD,
C. B. SMITH.

No. 15, class 4. Fine bucks, fair wool, and beautifully formed animals; belonging to A. G. Percy, Lyons, Wayne county.

SWINE.

The committee regret that the competition was so small, but found a sufficient number to fill up the limited list of premiums.

Boars.

1. C. R. Nichols, Darien, Genesee Co., Leicester,---	$10 00
2. G. V. Sackett, Seneca Falls, Byfield, ----------	Col. Tour.
3. H. Hubbard, Canandaigua,----------	Diploma.

Sows.

1. Wm. Howard, Owasco,----------	$10 00
2. A. Shaw, Scipio,----------	Col. Tour.
3. E. T. Throop, Owasco,----------	Diploma.

Pigs.

1. Wm. Howard, Owasco,----------	Col. Tour.
2. Chester Moses, Skaneateles, ----------	Diploma.

The committee could not pass by a large family of 11 pigs, owned by Mr. Anthony Shaw, of Scipio, without recommending the awarding of a ---------- Diploma.
Also to George Carlisle, Bethany, for his boar,------ do
And C. R. Nichols, Darien, a boar pig, ---------- do

PARIS BARBER,
P. N. RUST,
E. L. B. CURTIS,
Committee.

Auburn, 17th September, 1846.

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POULTRY.

The committee on poultry, report: That they award the premium of $3.00 on Dorkings, to L. F. Allen, of Buffalo, for a very superior lot, one cock and five hens, part of them imported, and a lot of chickens.

To F. C. Moses, of Skaneateles, $3, for very fine black Poland, one cock and two hens.

J. F. Osborn, large fowls, Malays, $3.

do very large top knot ducks, $3.

M. B. Converse, White Brazilian Turkeys, $3.

Samel R. Osborn, Fleming, for the greatest variety of fowls, $10.

H. E. HOOKER,
J. P. FOGG,
Committee.

PLOWS.

The committee for testing the useful properties of plows, have had nothing brought to their notice, either new in construction or principle, although they have examined many very creditable specimens, both as regards the manner in which the work was performed, as well as the neatness with which they were constructed.

They are of opinion that Delano's Diamond plow, which has heretofore received the first premium of the Society, is still entitled to the preference, and they therefore award to Mr. Delano the certificate of the Society.

2. J. B. Gaylord, Auburn, diploma.

3. David Anthony, Springfield, Vol. Trans.

The committee would call the attention of the Society to a very simple and ingenious contrivance, invented and patented by D. Anthony, of Springfield, for connecting the after end of the plow beam to the handle, in such a manner that it may be varied to the right or left, so as to give the plow more or less land, or to change it in a moment from a two to a three horse plow.

C. C. DENNIS,
E. MARKS,
N. S. WRIGHT,
Committee.

September, 1846.

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PLOWING.

The committee on plowing beg leave to report: That there were ten competitors for premiums, and we truly regret that the number was so small, and believe that if the fair was held in the first week in October, there would be a much larger competition.

We award the premiums as follows:

1. Davis Cossit, Onondaga, $15.
2. Azariah Letts, Ulysses, $12.
3. Henry Willard, Cayuga, $10.
4. L. E. Pratt, Salina, Col. Tour.
5. J. B. Gaylord, Auburn, Vol. Trans.

The plowman of land No. 3, plowed his land very well, only the last furrow was badly turned. This was owing to the previous furrow being turned too deep. On the whole, the work was all done in a workmanlike manner. Lots No. 6 and 7 were not well finished —otherwise their work was well executed, and would have been entitled to premiums had their finishing been right.

JOHN JOHNSON, *Chairman.*
HENRY BREWER.

ON IMPLEMENTS, EMBRACING WAGONS, HARROWS, THRESHING MACHINES, &c.

The committee on that class of implements embracing Wagons, Harrows, Threshing Machines, &c., respectfully report: That owing to the large number of articles which they were called upon to examine and decide upon, it was not in their power to exercise, in all cases, that degree of discrimination in making the awards, which the merits of articles deserved; and in some departments so much merit was manifested by numerous competitors, that it was with difficulty the committee could decide which of them were best entitled to the honors of the Society. The committee dare not hope that their decisions will prove satisfactory to all the competitors, but they have honestly endeavored to do justice to all, and promote the objects of the Society. The committee award as follows:

Farm Wagons.

None exhibited.

Best Harrow.

O. Barton, Onondaga Co., Silver medal.

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Best Cultivator.

D. B. Rogers, Seneca Falls, Silver medal.

Best Horse Power.

First, Richard Montgomery, Onondaga co., Silver medal.
Second, J. A. Pitts, Rochester, Diploma.
Third, Buel & Nichols, Cazenovia, (for two horses) Vol. Trans.

Best Threshing Machine and Separator.

First, J. A Pitts, Rochester, Silver medal.
Second, E. Hix, Wyoming co., Diploma.
Third, Buel & Nichols, Cazenovia, Vol. Trans.

Best Corn Stalk Cutter.

First, J. C. Rich, Monroe co., Silver medal.
Second, C. Burnett, Lyons, Diploma.
Third, Geo. Catchpole, Geneva, Vol. Trans.

Best Straw Cutter.

First, E. Lockwood, Norwalk, Conn., (Blackman's patent.) Silver medal.
Second, J. C. Rich, Monroe co., Diploma.
Third, J. W. Webb, Ledyard, Vol. Trans.

Best Fanning Mills.

(E. Taylor, Rochester, Grant's patent. This mill having received the first premium last year, is not entitled to compete; so we award him a certificate.)
First, Daniel Clow, Cayuga co., Silver medal; (well deserved.)
Second, John Gilbert, Lyons, Diploma.
Third, Orrin Heffron, Poplar Ridge, Vol. Trans.

Best Drill Barrow.

E. Taylor, Rochester, (Pratt's patent,) Diploma.

A Corn Planter.

Austin Freeman, & Co., Livonia, Vol. Trans.

J. RAPALJE,
A. S. NEWBERRY.
J. BOIS,
Committee.

P. S. The committee would also state, that they saw other straw cutters that had taken premiums at previous fairs, and upon which they were not at liberty to take action.

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CORN AND COB CRUSHERS, &c.

The committee on corn and cob crushers, &c., report:

That Mr. John A. Pitts, of Rochester, exhibited his corn and cob crusher, upon which he received the first premium last year: this mill is very far superior to any other that has come under the notice of your committee, for grinding corn in the ear. No other corn and cob crusher was shown us, which we feel warranted in awarding a premium.

A clover machine was observed by us on the ground, but as no person could be found who had charge of it, to give us explanations, we were compelled to pass it without expressing an opinion as to its merits.

The premium, a diploma, was awarded to L. M. Whitman, of Pike, Wyoming co., for the best horse rake.

A diploma was awarded to C. H. Wheadon, of Homer, for the best farm harness.

A diploma was awarded to J. Starks, of Genoa, for the best grain cradle.

A diploma to Barton and Belden, of Rochester, for six hay forks; also a diploma for the best six dung forks; and also a diploma for the best six axes.

A diploma was awarded to R. M. Hine, of Throopville, Cayuga co., for the best six hoes.

F. Waters & Co., of Chautauque co., presented a collection of 25 agricultural implements, of splendid finish, and all having the appearance of being in every respect of the best quality. We award them the premium, a silver medal, offered for the best collection of agricultural implements.

A diploma to Mr. Burrall, of Geneva, for his corn sheller.

All of which is respectfully submitted.

GEO. GEDDES,
K. E. SANFORD,
F. L. OLMSTED,
Committee.

Auburn, Sept. 17th, 1846.

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BUTTER.

The committee appointed to award premiums on butter, respectfully report:

That for one jar of 25 lbs. of butter, made in thirty days, they have awarded the first premium of $25 to E. R. Evans, of Marcy, Oneida co.

A statement of the process of making this very superior butter, accompanies this report, certified to by Sarah Pugh, the dairy woman who made it, and to whom we award the compliment of being perfect mistress of her business. The article in quality and flavor, ranks with the best specimens of Orange county or Philadelphia butter. This butter was made in September.

They have awarded the second premium of $15 to O. C. Crocker, of Union, Broome county, for a jar of 25 lbs.

This butter is also very excellent in quality, and was made in June.

For 25 lbs. made in June, they have awarded the first premium to Joseph Baker, Otisco, Onondaga co., $10.

Second, to Wm. Ottley, Phelps, Ontario co., Col. Tour.

Third, to Elisha Sheldon, Homer, Cortland co., Trans.

For 50 lbs. made at any time, they award the first premium to Joseph Baker, Otisco, $15.

Second, to O. C. Crocker, Union, Broome co., Col. Tour.

Third, to Abram Adams, Preble, Cortland co., Silver medal.

Fourth, to Elisha Sheldon, Homer, Diploma.

Fifth, John G. Wheeler, Sennet, Cayuga co., Trans.

The lots of butter to which the premiums have been awarded at this fair, have well sustained the reputation of the New-York dairy.

Z. BARTON STOUT, of Ontario,
J. J. SPEED, of Tompkins,
LESTER BRADNER, of Livingston,
Committee.

E. R. EVANS' STATEMENT.

This is a sample of butter made from five cows in thirty days, and fully complied with the rules of the society.

First, the cows were fed on after feed only; they were owned by me previous to the 1st of February, 1846; the milk drawn in one day, from the five cows during the trial, weighed 158 lbs. 6 oz.; the

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quantity measured was 78 quarts 1 gill. The quantity of butter weighed 217½ lbs. They were of the Native breed.

The manner of making, is as follows:

First, the milk is strained into pans, and is set a sufficient time for the cream to rise, (thirty-six hours say) as it depends somewhat on the weather, and the milk is skimmed before it gets sour, and churned daily. The mode of churning is the dash churn, attached to dog power, and the milk is freed from the butter without washing, with the ladle. I use the Liverpool salt, and no other substance.

The above trial was from the 13th of August, until the 12th of September inst. The milk was weighed and measured on the 11th instant.

E. R. EVANS.

I do hereby certify, that I assisted in milking and making the butter above mentioned, and that the above statement is true.

SARAH PUGH.

Marcy, Oneida county, N. Y.

O. C. CROCKER'S STATEMENT

Mode of manufacturing, as follows: Cows fed on pasture only; the cows owned by me, previous to the first day of Feb. 1846, the milk drawn from the cows on one day, during the trial, weighed nine hundred and sixty-six pounds, and measured one hundred and twenty-six gallons, and the milk produced forty pounds of butter. Whole number of pounds of butter manufactured from the forty cows during the thirty days trial, was 1,120 pounds, Principally Native cows, crossed with the Durhams, a few Devonshire crosses with the Natives. Fifty-four firkins of butter have been manufactured from the above mentioned dairy, the present season, since about the middle of March last, exclusive of the butter and milk consumed in my family, which consists of ten in number, constantly.

Forty cows kept upon this farm: kept in summer on pasture, and in winter on hay; stabled through March and April, and fed a little corn or meal. Churn the milk altogether, after the milk is drawn from the cows, we carry it to the cellar, strain it in twelve quart pans, sitting on a stone bottom, for the purpose of keeping it cool; let it stand about thirty-six hours, or until it begins to get thick, then empty into churns, then temper the milk according to the weather. When we commence churning, if very hot, it will require one pail full of cold water to five of milk; if the weather is cool, it must

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be tempered with warm water; when the butter is nearly churned, from one-half to a pail, containing twelve quarts of water, should be used in each churn, containing from fifteen to eighteen gallons; churn with a machine propelled by horse power; in winter the milk is kept in a warm room, prepared expressly for the purpose. The butter is freed from the milk by washing thoroughly in cold water, and wrought with a ladle. I have discontinued the use of butter workers, not being able to produce so uniform color, and also, the works are apt to cause the butter to be greasy. I use the imported rock salt, ground, or Ashton's the kind now principally used in the best dairies. As to the quantity, the amount used, is better regulated by the taste than any other way; the butter requires salt according to the temperature when it comes out of the churn; when soft it requires more salt, and when firm less, therefore I contend that there can be no fixed rule for salting by weighing. That in order to have a uniform dairy of butter, the salting must be regulated by the taste, the churning, working, and packing must be attended to by one person; no saltpetre or any other substance used. When a firkin is filled, it is immediately covered with a strong brine, made from the rock salt, which excludes it from the air. Nothing else kept in the cellar, except milk and butter.

HENRY FOUNTAIN,
Assistant in Dairy.
OLIVER C. CROCKER,
Owner of Dairy.

MR. BAKER'S STATEMENT.

The butter presented by me for your inspection, was made between the 1st and the 12th of the present month. The quantity of butter in the tub is fifty-six pounds. The number of cows milked was fourteen—they are kept during the summer on grass, clover and timothy; in the winter they are kept on hay and straw, with a few ears of corn daily. My mode of making butter is as follows: The milk is set in pans that hold about nine quarts, in hot weather they are filled about half full, in cool weather nearly full; it stands until the milk is thick; then the cream is taken off and churned in a dash churn—the butter is taken out into water and washed—it is then salted and worked in a butter machine—it then stands twenty-four hours and is worked again—it stands twenty-four hours longer and is then worked the last time. One ounce of dairy salt is used for one pound of butter. No saltpetre is used.

Otisco. JOSEPH BAKER.

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CHEESE.

The committee on cheese report: That the specimens presented for their examination are not of that excellent quality that would warrant them to award the first and second premiums on old cheese, and that the same reasons exist for not awarding all the premiums on new cheese.

WM. C. CRAIN,
JOHN MASKILL,
CHARLES KATHERN.

On old Cheese.

3d premium, Robert Eells, Westmoreland, Oneida co., Silver medal.
4th " Wm. Ottley, Phelps, Ontario co., Diploma.
5th " H. N. Washburn, Butternutts, Otsego co. Vol. Trans.

New Cheese.

2d premium, Robert Eells, Westmoreland, Oneida co., Col. Tour.
3d " Wm. Ottley, Phelps, Ontario co., Silver medal.
4th " Isaac Bucklin, Brutus, Cayuga co., Diploma.
5th " Anthony Shaw, Scipio, do Vol. Trans.

R. EELLS' STATEMENT ON MAKING CHEESE.

The cheese presented with this statement was made in June, 1845, from the milk of twenty-four cows—one day's milk or two milkings; no addition of cream. The quantity of salt, one tea-cup full of Liverpool salt to twenty pounds curd—rennet prepared by steeping in salt and water until the strength is obtained; then strain off the liquor; use a sufficient quantity to digest in thirty minutes; pressed forty-eight hours in a screw press; then taken from the press and placed upon tables or shelves; rubbed with annatto and bandaged the same day; turned and rubbed daily through the season; moistened with whey oil often as necessary; washed with weak brine occasionally.

ROBERT EELLS.

Westmoreland, Oneida Co., N. Y., Feb. 14, 1846.

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WM. OTTLEY'S STATEMENT.

One hundred pounds of cheese over one year old.

This cheese was made in July, 1845. The number of cows kept, eight. The cheeses were each made from three milkings; the milk set as soon as milked; *half a gill of rennet* to each milking—rennet prepared as follows: Put four rennets into three pints of fresh water, and let them remain twenty-four hours; then add four gallons strong brine, previously boiled and skimmed, and having become cool; and stir it once a day for ten or twelve days, when it will be fit for use. An improved *press* is used.

After the curd is placed in press, it is left one hour, when the *cheese* is taken out and turned. The cheese is kept in press *forty-eight* hours, and turned *five* times—(about) every tenth hour after the first turning.

Treatment of Cheese.—After being removed from the press, the cheese is placed in a dark, cool room, and after standing twenty-four hours is well rubbed with butter. After this to be rubbed and turned every morning until perfectly cured.

WM. OTTLEY.

H. N. WASHBURN'S METHOD OF MAKING CHEESE.

The cheese was made in July and August, 1845. Number of cows kept, six. At night, the milk is strained into a tub to stand until morning. The cream is then taken off and warmed, and the milk warmed to about milk heat. The cream is poured through a cloth into the tub and the morning's milk added to it. Set it while milk is warm, using rennet according to strength, sufficient to bring the curd well. Let it stand about one hour, cut up the curd and dip the whey off through a cloth, take it up into a basket and press the whey entirely out. It is then cut up in small pieces, and scalded in water sufficiently warm to shrink the curd a little, then cool and press the water out, and salt it, using about a teaspoonful of salt to a cheese weighing about fifteen pounds. Put it in the press and let it remain twenty four hours, turning it once during the time. It is then placed on a shelf, greased with butter made from the whey, and turned every day until well cured.

The cheese is colored with annatto well dissolved in the milk before the rennet is put in.

The rennet is prepared by first rinsing it carefully, then put in a dish with salt twenty-four hours, it is then dried by stretching it on

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a stick, or tied up in a cloth with salt. When wanted for use, a small piece is soaked in warm water.

ISAAC BUCKLEN'S STATEMENT.

The cheese presented by the subscriber, was made in July last from a dairy of six cows, made of four milkings. The rennet was prepared by emptying and rinsing clean in cold water, then rubbed over with fine salt and dried. When used, we cut off a piece of the rennet as large as a shilling, and soak it over night in a gill of warm water, and then put the water into the milk. We use an old fashioned home made cheese press, with bench and beam, press twenty-four hours, then rub the cheese once over with fine salt, afterwards turn daily, and rub the cheese with melted butter mixed with a decoction of red pepper.

One of our cows is a two year old heifer, and was not in the dairy until the 5th of June. We have made since the 15th of March,

400 lbs. butter; sold for 1 shilling per lb.	$50 00
1400 lbs. cheese, 6d per lb.	87 50
Raised five calves worth,	15 00
And one veal,	3 00
	$155 50

Cows 6; $25 per cow to this date.

ISAAC BUCKLEN.

Brutus, September 14, 1846.

P. S. The cows are the common breed, and have had no feed but pasture and hay, since the 5th of April. I. B.

SUGAR.

The committee to award premiums on Maple and Corn Stalk sugar would respectfully report: That no corn stalk sugar has been presented to them for examination.

There were nine samples of maple sugar of at least 25 pounds each, exhibited; that each is of very good quality, and that three of them are of very superior (rectified) quality, very nearly equal. The committee were hardly able to determine which should take the preference; but after examination with a magnifying glass, of the respective chrystals, they awarded the first premium of $10 to Benjamin Gauss, Jr. of East Bloomfield, Ontario county.

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To Moses Eames, of Rutland, Jefferson county, the second premium of $5.

To Erastus Bigelow, of Sangersfield, Oneida county, third, Diploma; and Vol. Trans. to W. E. Tallman, of Tully, Onondaga county.

All which is respectfully submitted.

O. F. MARSHALL,
WM. BLOSSOM,
ROBERT HADFIELD,
Committee.

BENJAMIN GAUSS', JR., STATEMENT.

In regard to the Manufacture of Maple Sugar.

The parcel of maple sugar herewith presented, is a part of that manufactured by me the last spring. I tap about 300 trees annually, and make usually about 800 lbs. Much pains is taken in cleansing the buckets, and in having the whole apparatus perfectly clean. The sap is boiled in sheet iron pans, placed on an arch; after it becomes syrup, it is taken to the house and cleansed with milk and the white of eggs. It is then boiled in a kettle until it will grain, and placed in pans to cool. When cool, it is put in boxes to drain. These boxes converge to a point, so that the molasses settles to the bottom. On the surface of the sugar in the boxes, damp flannel cloths are placed, and these cloths are washed every day in clean cold water, to extract whatever of coloring may be absorbed from the sugar. This process is continued until the coloring matter is extracted, and the sugar becomes as white as the specimen herewith exhibited.

BENJAMIN GAUSS, Jr.

East Bloomfield, Sept. 12, 1846.

MR. EAMES' STATEMENT.

Rutland.

First, the plan and manner of tapping the trees in this town is very nearly the same; that is, with a half-inch or five-eighths auger, and a spile inserted in the hole, and a pine tub to catch the sap from each tree. I gather my sap to one large reservoir once in 24 hours;

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then it is boiled each day to syrup, which is about half the sweetness of molasses; it is then taken out and strained through a flannel cloth, and put into a tub or barrel to cool and settle for 12 hours. (I use a sheet iron pan set in an arch of brick; the pan is made of Russia iron, eight feet long, four feet wide, and six inches deep.) It is then taken out, and I am careful not to move the bottom where it has settled, and place it in a kettle and heat it to 98 degrees. I then add (for 100 pounds) the whites of four eggs, two quarts of milk, and one ounce of saleratus (the eggs well beat up, and the saleratus well dissolved), and stir the whole well together in the syrup; and when the scum has all risen, it is to be taken off, and be sure it does not boil before you have done skimming it. Then it is boiled until it is done, which you will know by dropping some into water; which, if done, will form a wax. It then must be taken from the kettle, and placed in tin pans to cool and form the grain; and as soon as the grain is sufficiently formed, I then pour it into tunnel-shaped boxes to drain, and after 24 hours I place a flannel cloth on the top, and take the plug from the bottom, and let it drain. The flannel cloth I keep wet from day to day.

MOSES EAMES.

SILK.

The committee upon silk are somewhat disapppointed in not finding a larger amount of silk manufactured into cloth, ribbons, sewings, &c., presented for examination ; it is an evidence that there has not been an increased interest in this department for the last year.

There was but one specimen of silk cloth presented.

Manufactured Silk.

1. Clark Avery, Perryville, Madison Co., ---------- $15 00

Sewings.

1. do do $10 00
2. Joseph Belsher, Richford, Tioga,---------- 5 00
3. David Irish, Perryville, Madison,---------- Diploma
4. N. M. Coburn, Stockbridge, Madison,---------- Vol. Trans.

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Reeled Silk.

1. Joseph Belsher, Richford, Tioga,---------- $5 00
2. N. M. Coburn, Stockbridge, Madison,---------- Diploma
3. David Irish, Perryville, do ---------- Vol. Trans.

Cocoons.

1. N. M. Coburn, Stockbridge, Madison,---------- $10 00
2. Joseph Belsher, Richford, Tioga,---------- Col. Tour.

JOSEPH BELSHER,
EDWIN B. MORGAN,
HENRY L. BURR,
Committee.

DOMESTIC MANUFACTURES.

Woolen Blankets

1. Wm. Ottley, Phelps, ---------- $5 00
2. F. P. Brown, Elbridge, ---------- 4 00
3. Geo. W. Henry, Martinsburgh, ---------- 3 00

Flannels.

1. Albert L. White, Rutland, Jeff. Co.,---------- $5 00
2. Clark Avery, Perryville, Madison,---------- 4 00
3. Wm. Ottley, Phelps, Ontario, ---------- 3 00

Woolen Cloths.

1. M. W. Priest, Little Falls,---------- $5 00
2. O. Kellogg, Skaneateles, ---------- 4 00
3. do do ---------- 3 00

Woolen Carpets.

1. Jonathan Conger, Groton, ---------- $5 00
2. Mrs. V. R. Voorhees, Amsterdam,---------- 4 00
3. Dan'l C. Monroe, Elbridge, ---------- 3 00

Tow Cloth.

1. Anthony Shaw, Scipio, ---------- $3 00

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Linen.

1. A Pine, Pittstown,	$5 00
2. F. P. Brown, Elbridge,	4 00
3. E. W. Bateman, Venice,	3 00

Linen Diaper.

1. A. Pine, Pittstown,	$5 00
2. Marg't Jeffery, Truxton,	4 00
3. Geo. W. Henry, Martinsburgh,	3 00

Hearth Rugs.

1. Hotchkiss & Smith, Auburn,	$5 00
2. J. Barber, do	4 00
3. Miss A. R. Smith, Vernon,	3 00

Double Carpet Coverlets.

1. Caroline C. Jones, Westmoreland,	$4 00
2. C. R. Nichols, Darien, Genesee,	3 00
3. C. Britt, Perryville,	2 00
4. J. Conger, Groton,	Vol. Trans.

Woolen Stockings.

1. Marg't Jeffery, Truxton,	$2 00
2. Mrs. Greenleaf, Watertown,	Vol. Trans.
3. David Thomas, Aurora,	Diploma

Best Wove Woolen Stockings.

L. C. Morris, Auburn,	$2 00

Linen Sewing Thread.

R. S. Ransom, Perryville,	$2 00

Kersey.

1. C. Britt, Perryville,	$3 00
2. R. S. Ransom, do	2 00
3. A. Pine, Pittstown,	Vol. Trans.

Rag Carpet.

1. Wm. Ranney, Elbridge,	$3 00
2. Geo. Hawley, Auburn,	2 00
3. Abram Adams, Preble, Cortland Co.,	Vol. Trans.

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Linen Knit Stockings.

1. Chester Gridley, Sennet,	$2 00
2. E. W. Bateman, Venice,	Vol. Trans.
3. Jno. L. Eastman, Lodi,	Diploma.

Knit Cotton Stockings.

1. L. C. Morris, Auburn,	$2 00
2. " "	Vol. Trans.
3. " "	Diploma.

Bed Quilts.

Discretionary, Rebecca Johnson, Syracuse,	$5 00
" L. C. Morris, Auburn,	3 00
" B. F. Hawks, Phelpstown,	3 00

M. D. BURNET,
CURTIS MOSES,
Committee.

Auburn, Sept. 17, 1846.

FRUIT.

The committee on Fruit respectfully report: That they have awarded the premiums:

For the greatest variety of Table Apples, to Benjamin Hodge, Buffalo, $5.

For the second greatest variety of Table Apples, to A. Bryan and son, Buffalo, $3.

For the third greatest variety of Table Apples, to C. Parvis, Greece, Monroe county, vol. Transactions.

For the best twelve sorts, not less than three of each, to J. C. Hastings, Clinton, Oneida county, $3.

For the best new seedling Apple, to Isaac Hildreth, Geneva, Ontario county, $3.

For the greatest variety of Table Pears, to Elwanger & Barry, Rochester, Monroe county, $3.

For the second greatest variety of Table Pears, to Benj. Hodge, Buffalo, Vol. Trans.

For the greatest variety of winter Pears, to Elwanger and Barry, Vol. Trans.

For the best 12 quinces, to George Underwood, Auburn, Vol. Trans.

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For the best six bunches native Grapes, to Edward Thomas, Geneva, Ontario county, Vol. Trans.,

For the best six bunches of foreign Grapes, to Chester Parsons, Skaneateles, Vol. Trans.

N. GOODSELL,
WM. L. DEWITT.

FRUIT, 2d CLASS.

The committee on the 2d class of Fruits, report: That they award the premium, (Vol. Trans.) for the best twelve Peaches, to Bissell and Hooker, of Rochester, and for the best twenty-four Plums, (Vol. Tran) to Dr. G. F. Pratt, of Buffalo. No other kinds of fruit came within their line of duties.

C. BEADLE, *Chairman.*
DAVID THOMAS,
ZERAH BURR.

Auburn, Sept. 16, 1846.

FLOWERS.

The committee appointed to award premiums on Flowers, respectfully report:

That they have attended to the duties assigned them, and given to the subject all the attention in their power.

They take pleasure in congratulating the Society on the increasing interest which the annual Fairs are exciting in the minds of amateur and professional Florists, evinced by the greatly augmented display of *rare* and *choice* Flowers from remote parts of the State, at this, over all previous exhibitions.

The chairman of the committee, on his own responsibility, not having had an opportunity recently, for consultation with the other members of the committee, begs leave to suggest to the Society, whether it will not be advisable hereafter, to offer two prize lists for competitors, one for amateurs, and one for professional growers, (those who grow Flowers and plants for sale.) As now and heretofore managed, there is little or no inducement offered amateurs to exhibit the produce of their gardens or green houses, as the large prizes are almost invariably carried off by professional growers; from the circumstance that few, if any amateurs can be expected to

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have collections as extensive as those whose whole time is devoted to the subject, and whose only occupation is the growing of plants and flowers for sale. This fact being generally known, is the reason why so few amateur growers are among the exhibitors at the Fairs. If this suggestion is adopted, it is respectfully suggested that it may be the means of rendering this most attractive part of the State Show far more i teresting than heretofore, as it will induce a spirit of rivalry among prof ssional growers, as well as among amateurs.

All which is respectfully submitted.

HERMAN WENDELL, *Albany*,
JAMES TRACY, *Syracuse*,
WM. R. RANDALL, *of Cortland*.

There were exhibited by Elihu Tyler, of Buffalo, Triumph DeLuxemburgh, Hymeneal Tea, Jaune Despres, Lamarque, Sanguinea, Amelia, Hamiltonii, Cramoise Superieur, Archinto, and other roses; also eight varieties of Verbenas, and other choice flowers, beautifully arranged in a basket.

By Prof Coppock, of Buffalo, a floral design, composed of choice Dahlias, German Asters and Globe Amaranths, arranged on a ground of green moss, and representing a spread eagle, with the name of the Buffalo Horticultural society in its beak, all beautifully arranged by the pupils of his musical academy.

By Col. Hodges, of Buffalo, sixteen varieties of Tea, Noisette, and Bourbon roses; twelve varieties of Verbenas, a few choice German Asters, a Passiflora Alata plant in a tub, and two very large coxcomb plants growing in pots, the flower of one of them measuring 20 inches over its crest.

By L. Menand, of Albany, two very beautiful bouquets, arranged with exquisite taste and skill, and composed of thirty-one varieties of choice flowers, viz: Erica Blanda, Erica Caffra, Erica Cerinthoides, Erica Bowiea, Erica Gracilis, Erica Transparens, Fuschias Venus Victrix, F. Exoniensis, F. Chauverii, F. Rosea Alba, Hoya Carnosa, Rondoleta Speciosa, Oeschynanthus Grandiflora, Phlox Paniculata Alba, Phlox Onosmoeflora, Diosmia Eriodes, Heliotropeum Peruvianum, Delphinum Azureum, Arbutila Striatem, Carnations, Schysanthus Alba, Verbenas Polkii, Eclipse and Majestica roses, Aimee Vibert, Souvenir de La Malmaison, Marshal de Villars, Arch Duke Charles, Queen of the Bourbons, Princess of Nassau.

By Dr. A. Thompson, of Aurora, German Asters of several sorts, many varieties of Phlox Drummondii, and Zinnias, several beautiful Verbenas, and also a collection of choice Dahlias and other flowers.

By Samuel S. Graves, of Auburn, Dahlias, Zinnias, Phloxes, Helacanthus, Petunias, Asters, and Pansies.

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By Mrs. P. B. Eaton, of Auburn, several varieties of Tea Roses, Geraneums, Verbenas, &c. &c.

By Henry Morgan, Esq., of Aurora, eight varieties of Dahlias, seven beautiful varieties of German Asters, Double German Stocks, Double Sweet Williams, Petunias, Globe Amaranths, Zinnias, Honeysuckles, Champney roses, all beautifully arranged in four floral ornaments for vases.

By Prof. J. W. Jackson, of Schenectady, seventy-seven different varieties of flowers, beautifully arranged in fifteen different floral ornaments for vases, composed of among others, twenty-four different varieties of new and choice Dahlias, twenty very beautiful varieties of German Quilled Asters, several new Verbenas, as Eclipse, Feasts New White, Roseum Superbum, &c., &c., Fuschias, Roses, Zinnias, Petunias, Amaranths, several new Phloxes, and many others.

By Mrs. E. T. Throop Martin, of Willow Brook, Owasco Lake, a very beautifully arranged floral ornament, composed of different varieties of choice flowers, and also four beautiful bouquets.

By Hon. J. Porter, of Auburn, a fine collection of choice plants, as Dahlias, Geraneums, Verbenas, &c.

By Mr. H. Gibson, of Auburn, Dahlias, Verbenas, Roses, Phloxes and many other flowers, in great profusion.

By I. J. Seymour, of Auburn, a fine display of cut flowers, and a Volkameria growing in a tub in full bloom, and in fine condition

By Mrs. Leland, of Auburn, a handsome floral ornament.

By Mrs. Watrous, of Auburn, a large number of cut flowers, and two very fine Oleander trees in full bloom.

By Mrs. Chedell, of Auburn, a large number of choice Dahlias, and other flowers.

By Miss Jane Holley, a very large Begonia Grandiflora, in full bloom and good condition.

By Miss Morse, of Skaneateles, several very fine Cactii, a number of Geraneums, Bignonias, and other green house plants.

By Mrs. M. Miller, of Auburn, several large and beautiful green house plants, growing in tubs and pots; including an orange tree six feet high and laden with fruit; a Shaddock tree in fruit, a Ficus Elastica, ten feet high, a Lemon tree heavily laden with fruit, a large and fine Cactus flagelliformis, a very large and splendid Arum esculentum, and many others.

By Elwanger and Barry, of the Mount Hope Nurseries, Rochester, twenty-nine varieties of Roses, viz., of Hybd. Perpetuals, Augustine Mouchelet, Marquis Bocella, Dutchess de Nemours; of Noisettes, Lutea and Monstrosa, of Teas, Victoire Modeste, Triomphe de Luxemburgh, Souvenir de La Malmaison, Strombio, La Sylphide, Genl.

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Soyez, Bougere, Delphina Grandis, Princess Maria; of Bourbons, Henry Planter, Genl. Dubourg, Princess Clementine, Hermosa; of Bengals, Louis Phillippe, Lawrencia, Agrapina, Dutchess of Kent, Beau Carmoline, Diantherosa Grandval, Vanilla scented, White China and Madonna. Twenty-six varieties of Dahlias, viz: La Tour D'Auvergne, Rienzi, Viscountess of Berresford, Marshal Soult, Hector, Horace Binney, Mrs. Rushton, Topaz Rouge et Noir, King of Lilacs, Lady Bathurst, Lord Howden, Girlings' Prince of Wales, Glory of Altenburgh, Simon Snyder, Henry Clay, Washington Irving, Murillo, Col. Mansfield, Conservative, Ansells Unique, Widnall's Queen, Standard of Perfection, Golden Sovereign and Girling's Perfection. Twelve varieties of Verbenas, viz: Pepperii, Bicolor Grandiflora, Fulgens, Rosea Elegans, Candidissima, Sanguinea, Brillii, President, and four of E. & W.'s own seedlings, Barryii, Genesee, Odorata and Rochester, all very good. Also two floral ornaments, beautifully arranged with choice flowers, such as Roses, Fuschias, Heliotropes, Dahlias, Rose Geraneums, &c.

James Wilson, Nurseryman and Florist of Albany.—One hundred and thirty-two varieties of flowers, including among the number twenty-six varieties of Dahlia, new and choice, viz: Emperor of China, Hero of the West, Sir E. Antrobus, Eva, Constantia, Oakley Surprise, Lady St, Maur, Oddity, Minerva, Striata Formasissimum, Braggs Antagonist, Mrs. Rushton, Makensies Perfection, Argo, Prince of Wales, Robert, King of Lilachs, Purity, Lady Sale, Illuminator, Viscount Ressigneur, Dupetit Thouars, Great Western, Andrew Hofer, Tippecanoe, Marchioness of Ormond, La Tour d'Auvergne. Twenty beautifully quilled double German Asters. Fourteen of the finest and newest Verbenas, such as Majestica, Feasts new White, Eclipse, Brills Roseum, Polkii, Roseum Superbum, Fulgens, Buists new Blue, Bicolor, &c., &c. Seven varieties of new Phloxes, viz: Princess Marianne, Frelinghuysen, Harrisonii, Paniculata Latifolia, a new dark-striped Paniculata var. new purple, and Accuminata Alba, Gardenias, Heliotropes, Ericas. Several very fine Fuschias, &c., &c., together with thirty-two hyb'd Perpetuals, Isle de Bourbon, Tea, China, Noisette and other roses, viz: Aubernon, Paul Joseph, Madam Despres, Hermosa, Triomphe de Luxemburgh, Queen Victoria, Julie de Lyons Champneyana, Robespierre, Dr. Marx, Rivers Perpetual, Dutchess of Mechlenburgh, Dr. Roques Agripina, Augustine Mouchelet, La Reine, Fairy-rose, a "Laurencia," Ophire, Chromatella or Cloth of Gold, Smithii, Duc d'Anmale, Sanguinea, Sylph, Multiflora, Yellow Tea, Ninon de l'Enclos, Bon Seline, Bougere, Prince Albert, le Pactiolis, Mazeppa and Madam Nerard. An exquisitely arranged bouquet composed of thirty-six different varieties of choice and rare

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flowers, and a very beautifully arranged floral design, composed of more than one hundred choice Dahlias, Roses, Gladioluses, German Asters, Geraneums, Fuschias, Heliotropeums, Zinnias, Globe Amaranths, &c., &c.

By Edward Thomas of Geneva, Ontario county.—Three new seedling Dahlias, "Mrs. Hemans, Thomas' Perfection, and new Globe Crimson," 1st. Mrs. Hemans is a white tipped with vermillion, well formed, petals finely cupped and a full centre, flower about the size of Striata Formasissimum.

2d. Thomas' Perfection, is a dark maroon, of globular form, full centre, petals finely cupped, and a good flower, about the size of Mrs. Hemans.

3d. New-Globe Crimson, is a small flower of globular form, with a full centre, and petals finely quilled. Also, seventy different varieties of cut flowers, including among the number, about a dozen Tea and China roses; six varieties of Verbenas, six very fine German Asters, Carnations, Phlox Drummondii, Cactus Jenkonsonii, double China Pinks, and forty-four different varieties of Dahlias, such as Charles the Twelfth, Surpasse Royal, Striata Formasissimum, Incomparable, Sunbury Hero, Inwoods Earl, Seamans Clara, Red Rover, Queen Victoria, King of the Yellows, Conqueror of Europe, &c., &c. Mr. Thomas was unfortunately detained by the non arrival of the western cars, until after the premiums had been awarded to articles offered for competition.

The committee have awarded premiums as follows:

For the greatest variety and quantity of flowers, first premium to James Wilson, of Albany, Silver medal.

Second, to Professor Isaac W. Jackson, of Schenectady, Diploma.

Third, to Elwanger and Barry, Rochester, Vol. Trans.

For seedling Dahlias there appeared but one competitor, Edward Thomas, of Geneva; his Dahlias being of great merit and beauty, the committee awarded the first premium to his, Mrs. Hemans, particularly noticed above, Diploma.

And the second premium to his, "Thomas' Perfection," Diploma.

For the best floral ornament, to James Wilson, of Albany, a silver medal.

For the best twenty-five varieties of dahlias:

1st premium, to James Wilson, of Albany, a silver medal.
2d " Ellwanger & Barry, Rochester, a diploma.
3d " Prof. J. W. Jackson, Schenectady, a Vol. of Trans.

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For the most beautiful bouquet:

1st premium, to James Wilson, of Albany, Colman's Tour.
2d " L. Menand, of Albany, a diploma.
3d " L. Menand, of Albany, Vol. of Trans.

For the greatest variety of green-house plants, owned by one individual:

1st premium, to Mrs. M. Miller, of Auburn, a diploma.
2d " Mrs. H. C. Morse, of Skaneateles, Vol. of Trans.

For the best twenty German Asters, to Prof. Isaac W. Jackson, of Schenectady, a Vol. of Trans.

For the best twelve varieties of roses, in bloom:

1st premium, to Jas. Wilson, of Albany, a Diploma.
2d " Elwanger & Barry, of Rochester, Vol. of Trans.

The committee have awarded the following discretionary premiums:

To Mrs. E. T. Throop Martin, of Willow Brook, Owasco Lake, Cayuga county, for a beautiful floral ornament, composed of rare flowers, and exquisitely arranged by herself, a Diploma.

To Elihu Tyler, of Buffalo, for a beautifully arranged basket of choice flowers, a Diploma.

To Elwanger & Barry, of Rochester, for a tastefully arranged floral ornament, composed of rare flowers, a Diploma.

To Prof. Coppack, of Buffalo, for an elaborately wrought floral design, arranged with great skill and good taste, a Diploma.

To Benjamin Hodges, of Buffalo, for a choice collection of roses, verbenas and other flowers, a Diploma.

To Wm. Webb, of Buffalo, for a fine display of choice dahlias, roses, verbenas and other flowers, a Diploma.

To Henry Morgan, Esq., of Aurora, for a beautiful floral ornament, composed of choice flowers, and arranged with good taste, a Diploma.

All of which is respectfully submitted.

HERMAN WENDELL, M. D., of Albany.
WILLIAM R. RANDALL, of Cortland.
JAMES TRACY, of Syracuse.

Committee.

Auburn, Sept. 18, 1846.

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REPORT OF COMMITTEE ON VEGETABLES.

The committee on vegetables submit the following report :

That the exhibition, as a whole, caused the highest gratification, reflecting as it did the skill employed not only in culture, but the selection of such varieties as are much approved. Vegetables, constituting as they do, the chief luxury of the table, the committee beg leave to recommend to farmers increased zeal in their cultivation and effort to procure the improved varieties, simply for the reason, if for none other, that the cost of culture is no more than those of an inferior character. Very many have made laudable efforts thus to do; but the committee regret to state, that such efforts have been baffled by the grossest impositions of some, who make it their business to supply us our seeds ; frequently a different variety than the label indicated, while in other instances seeds either too old or immature, have been vended.

Frauds of this nature are so easily practiced, that it becomes one and all, when detected, to expose the names of those who commit them, through the medium of our agricultural papers, as being the only sure means of checking an imposition. It should be the duty of seedsmen to endorse their names on the envelopes, and without such endorsement, the farmer and gardener should beware of purchasing.

Water Melons.

Several varieties were exhibited, but the one called the *Imperia* was distinguished for its richness of flavor, and the committee recommend an extension of its cultivation, it being but little known. For this and two other varieties, the committee award to

H. N. Langworthy, ----------	Col. Tour.
Musk melons, George Cooper, Irondequoit, (Nutmeg variety,) ----------	Vol. Trans.
White carrots for the table, C. F. Crossman, Rochester,	do
Field carrots, (yellow,) J. F. Osborn, Mentz,--------	do
Beets, long blood, C. F. Crossman, Rochester,-------	do
White parsnep, Geo. Cooper, Irondequoit,----------	do
White table turnep, do do ----------	do
Onions; those presented were red, of a coarse texture, and not fit for the table, and not deemed worthy of a premium.	
Cabbage, Geo. Cooper, of Irondequoit,----------	Vol. Trans.
Tomatoes, C. F. Crosman, Rochester,----------	do
Egg plant, do do ----------	do

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Sweet potatoes, H. G. Dickinson, ---------- Vol. Trans.
Lima beans, Ira Hopkins, Auburn, ---------- do
Parsley, Geo. Cooper, Irondequoit,---------- do
Winter squashes, H. G. Dickinson, (largest weighing 80 lbs.)---------- do
Winter squashes, Hiram Hubbell, Canandaigua,----- do
Six grown from one vine, the largest of which weighed 146¾ lbs., and the aggregate weight was 574 lbs.
Pumpkins, C. Moses, Skaneateles, ---------- Vol. Trans.

CORN.

The specimens of corn presented were very fine, and the committee had no little difficulty in determining the best variety. They awarded, however, the premium to a specimen of white, chiefly from the consideration that white corn commands for export from three to eight cents per bushel more than yellow. Since the fair at Auburn, *Yellow Corn* has become the most valuable for market.

Chester Gridley, Sennet, ---------- Vol. Trans.
Also for a specimen of yellow,
To Doct. John Thompson, Ledyard,---------- do
J. F. Osborn, Mentz,---------- do
Mangel wurtzel, James Rattle, Sennet, ---------- do
Sugar beets, John F. Osborn, Mentz,---------- do

Discretionary Premiums.

Thomas Ogden, specimens of superior beets, carrots, and millet,---------- Vol. Trans.
Sweet corn and red peppers, A. Austin, ---------- do

WHEAT.

Three beautiful specimens of wheat, viz: Soules' improved Flint, and Kentucky Flint, were presented by R. Harman, Wheatland, ---------- Vol. Trans.

Potatoes for the table.

1. C. R. Nichols, Mercer variety, ---------- $2
2. C. F. Crosman, Long pink eyes, ---------- Trans.
3. J. F. Osborn, " " ---------- Trans.

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Seedling Potatoes.

N. S. Smith, Buffalo, Pink eyes, $5.

Four other varieties of seedling potatoes were presented, for which a discretionary premium is awarded of Col. Tour.

These specimens of seedling potatoes were exhibited by Mr. N. S. Smith, of Buffalo; some of which were produced from the seed of the potatoe ball, three years since, and none of the produce has as yet been affected by rot, proving conclusively what was at one time only conjecture, is now demonstration, that to avoid the hazard entirely of disease so universal, the farmer must resort to the seed for the reproduction of the tuber, as the only means of securing him against the loss frequently of entire crops. The committee emphatically recommend all to follow the safe and laudable example of Mr. Smith; and furthermore, so superior were his potatoes, they recommend the purchase of them for planting to all.

Teazles.

Richard Abbey, Waterloo, Trans.

Red Peppers.

Do. Five boxes, embracing several varieties, Trans.

L. A. MORRELL,
GEO. J. POMPELLY,
J. W. BISSELL,
DAVID GRAY,
Committee.

From a great variety of experiments made in this country and in England, it has been found that varieties raised from the seed, *are not exempt from the disease* in all cases, though they may, as in the specimen passed upon by the committee, sometimes escape. In the Trans. for 1845, p. 361-2, the following answers to this query will be found. *Query.* "Are varieties raised from the seed, or such as bear no apples to your knowledge, liable to failure?" The answers to this question, all show that potatoes raised from seed, are equally liable to the disease.

One of these persons, Mr. Gardiner, says: "Varieties raised from seed, are as liable to failure and disease as any of the older varieties. Above *sixty varieties* raised from seed, upon this farm, one, two and three years ago, and planted this spring, have been attacked by this disease with as much, and in *some cases with more violence* than the older varieties, *not one of the above seedlings being free from this disease.*"

Mr. Norton, who furnished the above, says: "I might multiply

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instances, but the above seemed quite sufficient. I may mention, however, that I was lately upon a farm in Northumberland, where a large number of seedlings have been raised, *and did not see a sound potatoe among them.*"

The following extract is taken from the 4th report of the Irish commissioners, appointed by the British government, to report on the potato disease in Ireland, made November 7, 1845; "but we do not find that the oldest varieties are the most tender, or the newest the most hardy. On the contrary, it is within our knowledge that in the present season, very healthy varieties *recently raised, have suffered much more* than kinds that have been long in cultivation."

In their 5th report, they say, "that the new varieties do not escape, we have the most positive proof. Dr. Maclean, a gentleman in all Horticultural affairs, raised but the other day a seedling potato of great vigor and excellence; its production is so recent, that few persons yet possess it at all."

"With this variety, a portion of an old meadow newly trenched, very near London, was planted in the autumn of 1844, and spring of 1845, no manure being used. The crop was so attacked by the disease, that *not a single potato* was found worth preserving."

The following important communication is taken from the Farmers' Magazine for March, 1847, received at the agricultural rooms, by the steamer of the 1st of March.

"THE POTATO DISEASE."

"*To the Editor of the Mark Lane Express.*

"Sir—The following fact about the potato plant, may not be unimportant at this time of year. I last year received, direct from the Brazils, two barrels of *genuine wild* potatoes, small, but very healthy, having been grown in a district *where no potato blight has been known.* They were planted about the end of February, in land that had remained in pasture more than twenty years. The situation and soil were favorable, and the latter a little stiffish. *No dung* was used in setting them, but a few decayed leaves and a little sand. Under these circumstances, then, it might be well expected that if potatoes can escape disease, these would have had a fair chance; wild Brazilian potatoes, planted in England *for the first time*, in a favorable situation, and in virgin soil. Yet in the autumn the disease failed not to appear, and even carried off a third of the finest and most vigorous crop ever seen.

The above, must then contradict many of the theories which have been advanced as to the cause or origin of the disease. It cannot

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be owing to any *degeneration* in the plant itself, or to any corruption or exhaustion of the land, or from over dunging, as some imagine. R. P. G."

"*Manchester, Feb.* 5, 1847."

BEE HIVES.

The special committee appointed on bee hives, respectfully report:

That we have endeavored to discharge our duty with the fidelity and consideration which the importance of that branch of husbandry demands.

We are highly gratified with the increased attention manifested both by inventors and the public generally, in the management and economy of the honey bee, and we believe that by adopting the best plan of hive now offered to the public, success and profit is placed almost beyond a chance of failure. With very little trouble and expense, the apiarian secures the luxurious stores of this industrious insect, and compels him to contribute largely to the sum total of his profits during the year, and at the same time can derive from them much amusement and a highly useful lesson as a pattern of industry. To those who are timid and fearful of their belligerent propensities, we would say that the *sweets* of life are seldom obtained without a *sting*.

The committee unanimously recommend the award of the following premiums:

To Aaron Colton, of Pittsfield, Vermont, whose bee hive combines more advantages than any we have ever yet seen, $5.

The simplicity of this hive, the pyramid form of the main chamber for the bees, and the application of the drawers for the pure honey, warrant us in cheerfully recommending it to the public.

To Wm. R. Kelsey, of Starkey, Yates co., for a hive possessing considerable merit, a Volume of Transactions of the State Society.

Several other hives were presented, but not possessing sufficient merit in the opinion of the committee, to warrant the award of a premium.

All of which is respectfully submitted.

ROSWELL G. PIERCE,
J. BURRELL,
ALINA ELDRIDGE,
Committee.

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STOVES.

The committee on stoves, &c., submit the following report:

In examining the number and variety of cooking stoves, all, perhaps, affording evidence of equal skill and ingenuity in their inventors, yet differing so essentially from each other in their arrangement, in order to do justice to any, have felt obliged to divide them into several distinct classes, in such a manner as to compare each with others of its own peculiar class.

They are happy to be able to say, that among the large number before them, they have found none so poor as, in the absence of all others, not to be regarded as a valuable improvement over the stoves of other days. Nor have they found any one embracing within itself, each of the good qualities of all the rest. Each has its peculiar claim to consideration; each its peculiar merit. But no one can be regarded as being the best stove, for all the possible uses for which such stoves are wanted.

Hence, they have arranged them as follows, and awarded the *premiums attached.*

For Hotels.

To Jackson and Phelps, of Syracuse, Buck's new No. 8 cooking stoves, for hotels, ---------- Diploma.

For farmer's use and other heavy work.

To D. G. Stafford, for his telegraph stove, a ------- Silver Medal.

The Dr. Channing, and the smaller sized Buck stoves, they have classed under the same head, and consider them excellent of their kind, and entitled to the high reputation they have made for themselves.

Air Tight Cooking Stoves, for village and city use.

To Anthony Davy & Co., of Troy for a set of six sizes of their Washington air tight stoves, ---------- Diploma.

Their summer oven, two sizes, appears to be a good article for those who wish to bake with coal, separate from other work.

The Telegraph, by Gen. Bosworth, and another stove of the same class, called the new principle stove, are good stoves of their kind.

The Lewis stove, improved, is worthy of notice as a fuel saving stove.

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Elevated Oven Stoves.

They have also examined two other elevated oven stoves, one Farrand's, and the other by Mills, of Troy, evincing a good share of ingenuity, and to those who prefer that kind of a cooking stove, it will be well worth their while to examine.

Double Oven Stoves.

There were three of this kind of stoves exhibited, and perhaps filling an important place in the wants of the stove market; all new and untried, so far as appeared to the committee, but they do not feel at liberty to multiply premiums upon cooking stoves.

Stove Hollow Ware.

Five pieces by Mr. Hoag, of Schenectady, the only articles of the kind exhibited, but an excellent article of ware,-- Vol. Trans.

Parlor Air Tights.

A large number, and many rich patterns of parlor stoves. They award to,

Attwood, Cole & Crane, for Attwood's patent noncondensing parlor stove, 1st premium, Silver Medal.

To Wager & Dater; parlor air tight; Diploma.

To J. S. & M. Peckham; parlor air tight; Diploma.

A 2 Col'n. parlor stove, by J. F. Seymour, Utica; no competition.

They also examined two steam boilers for domestic purposes, such as making cheese, washing, &c, one by Munger & Marsh, and one by Thomas A. Paine, both worthy of examination by those in need of the article.

They also examined a self-regulating register, for stoves, invented by Race; very simple in its construction, and worthy the attention of the trade.

Also 1 blacksmith's tuyere, by Nelson Little, of Lodi, Erie county, claiming the advantage of convenience and durability. They would recommend it to the notice of practical blacksmiths.

F. MANNING, *Chairman.*

NON-ENUMERATED ARTICLES.

The committee to whom was referred the *non-enumerated articles*, have found it an onerous and interminable duty; not the simple pick-

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ing up of the leavings of other committees of the undiscovered trifles, but an *omnium gatherum* of all the exuberances and flights of the universal Yankee genius, from a washing machine to a steam engine, from a butter firkin to a seraphine, and after the most attentive and unremitting exertions, they are sensible that among their other failings and short comings, they have not been able to notice one-half or even the moiety of that, of the numerous articles which according to the arrangements came within their province. They can only say that in future, to give satisfaction to the numerous exhibitors, these duties should be more equitably distributed and properly defined.

McCormack & Husseys' reaping machine. The committee consider the subject of perfecting a reaping machine, as a great desideratum to the agricultural interest, and to this community, that labor saving machinery may enable us to compete with the cheap and fertile lands of the west. But from the impossibility of testing the machines at this time of the year, the committee have to depend upon the testimony of those who have seen them operate, together with the mechanical construction of the machines.

The Hussey machine has been some years in use, and is approved, but the committee think that the McCormack machine combines some improvements, and therefore recommend a premium of $5.

R. H. Hull's stump machine. Its operations were exhibited to the committee, to their entire satisfaction. It combines great strength and almost unlimited power. Its general introduction and use, the committee consider one of the most desirable improvements to the farming interest that is now wanting, to perfect our rural economy. A premium of $10.

P. Seymour, East Bloomfield, Ontario county. A grain planter and ash sowing machine; an important instrument to the wheat and small grain grower. This on trial performs its duties perfectly, and will not disappoint the expectations of the purchaser. A premium of $5.

W. H. Jones, Bridgeport, Conn. For a sawing machine of a new and peculiar principle, which untested, the committee cannot decide upon its merits; its construction speaks favorable for its success. Diploma.

H. Hill, presented Silver & Co's. flax pulling machine. The committee could not see it in operation, but from its construction see no objections to it, and are of the opinion that if the inventor could construct a machine to pull the women's hair in these degenerate days until they would consent to spin the flax, he would do a service to the housewives and the community. Diploma.

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A. J. Menely, of West Troy. Bells of various sizes from one ton down, of superior tone and workmanship. His superiority in this manufacture, cannot need the praises or opinions of this committee. The committee award a Diploma.

Dana & Price, of Utica, elegant samples of stove front, and sash, door and cottage locks, and bell pulls, of superior construction and finish, which tell John Bull how the universal kingdom of Yankeedom can beat him. Premium, $5.

Allen & Carpenter, of Groton, Tompkins county. Beautiful specimens of carriages, particularly the Rockaway buggy, the finish and taste of which would not disgrace our oldest cities. The committee consider them entitled to $5.

James Gould & Co., Albany, buggy wagons and sleighs, of a style of workmanship and finish which ably sustain their well earned reputation in that line. Diploma.

Phelps & Messenger, Oneida Depot, a double acting force pump with a condenser, combining great power and easy action, a desirable article for machinery and other uses. $3.

H. G. Madison, Syracuse, a double cylinder force pump, which works well and can be cheaply constructed, and a very desirable article for house and farm wells. Diploma.

Calvin Young, of Auburn, a youth of 16 years of age, exhibited a fire engine of his construction, with a new and valuable improvement in the cylinders, and of exceeding creditable workmanship. $5.

Harry White, of Kirkland, Oneida, a balance slide farm gate, Baker's patent, a capital article, but rather expensive for general use. Its operations are easy and certain. $3.

S. Benham, Camillus, Onondaga county, a slide gate of cheap and easy construction, and a desirable improvement for farm use. Diploma.

James Hazlett, of Utica, a portable bedstead, of a construction combining strength, simplicity and other desirable improvements. $3.

E. Taylor, Rochester, N. Y., an improved refrigerator of neat construction and on philosophical principles, which no well regulated family who properly estimate the comforts and luxury of life should be without. Also a shower bath of beautitul construction, compact, neat and portable. $5.

E. H. Danforth, of Busti, Chautauque, a horse yoke, whereby the harness, traces and whiffletrees are dispensed with; a desideratum in plowing in orchards among stumps, and near fences. $3.

S. Wilson, of Dansville, Livingston county, an instrument for

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creasing, grooving and pricking leather for harness makers; a very ingenious and valuable labor-saving machine. $3.

F. Van Doorn, Rochester, for the best specimens of imitation graining of marble and wood, which this committee have ever viewed, and a very artistical performance. $3.

Wilson & McCullough, of Syracuse, a smut machine which, from exhibitions of its performance and other recommendations, the committee consider the best article in use. Diploma.

Daniel Pease, Jr., a buckwheat cleaner, which, from the rapidity of its performance and the perfection of its work, must be a valuable invention. Diploma.

Nelson Peck, Lyons, Wayne county, a mill for sawing siding boards, of a new construction and rapidity of work. Diploma.

J. H. Bristol, Fitzgerald's portable burr stone grist mill, which grinds all kinds of grain, and makes and bolts superior flour. Diploma.

J. F. Keeler, Cazenovia, a simple, cheap and correct hay scale, which the committee think is entitled to great credit and worthy of general acceptation. $5.

Elon Sheldon, Sennet, Cayuga county, an improved ox yoke, the harness and trimmings of which make it a desirable article for general use. Diploma.

Richard Dibble, Rochester, N. Y., a machine for drilling rock, a very desirable improvement, and as far as the committee could judge, quite perfect in its operations. Diploma.

John W. Bates, Utica, buggy wagons and chariot. Good work; got up in good taste. Diploma.

J. S. Royce, of Cuylerville, Livingston county, exhibited a wagon wheel of very novel construction, the spokes and hub of which are of metal, which combines strength and lightness in an extraordinary degree. Diploma.

Norman Rude, of Onondaga, Scripture's compound carriage wheel with portable spokes, a very strong and unique affair, deserving the test of trial. $3.

W. C. Pratt, of Weedsport, Cayuga, a self-acting cheese press of great simplicity and power, and the committee think a cheap and desirable article. Diploma.

Upton & Miller, Rochester, two seraphines, of superior tone and workmanship, a desirable musical instrument for churches and sacred melody. Diploma.

W. R. Strong, of Rochester, beautiful specimens of gut and whalebone whips, of superior workmanship and material; also, lashes, mitts and gloves. Diploma.

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Charles Rust & Son, Syracuse, superior specimens of a rosewood plush sofa and mahogany card tables. Diploma.

William Gardner, Geneva, a portable hunting and fishing case, admirably got up, and of his own make, a very creditable mechanical exhibition. Diploma.

J. F. Seymour, Utica, very rich specimens of stove pattern carving, of elegant style and good taste. Diploma.

J. H. Ladue, Cato, Cayuga county, a machine for crimping boot legs, which is simple and effective in construction, performing its operations rapidly and well. $3.

D. Murdock & Co., Albany, specimens of pure mustard, which is a very rare article in these days; also, paste blacking of superior properties. Diploma.

Abram Sherman, Summer Hill, Cayuga, two splendid specimens of butter firkins, which cannot be beat. $3.

D. D. R. Ormsby, Homer, Cortland, a model specimen of a low pressure steam engine of beautiful workmanship and action. Diploma.

F. A. Marsh, a card printing press, well constructed and performing its duties with neatness and despatch. Diploma.

Andrew Parker, Auburn, a portable hand power planing machine, a valuable labor saving article for carpenters and machinists. Diploma.

Benj. H. Otis, Syracuse, a morticing machine, which performed its duties well, and is a valuable implement to joiners and workers in wood, is of cheap construction and simple in its operations. Diploma.

Wm. M. Howell, Palmyra, Wayne, a model for an iron railroad bridge of a new construction, combining many valuable points. Diploma.

Kasson Frazer, of Syracuse, specimens of improvements in saddlery hardware, particularly in saddle pads and buckles, all of which are worthy of general introduction. $3.

P. Williamson, of Skaneateles, beautiful workmanship in single harness and bridles. Diploma.

F. A. Keeler, Albany, also very fine specimens of harness of good workmanship and taste. Diploma.

The committee, on examination of the one thousand one hundred and one washing machines and churns, find themselves utterly unable to decide on the rival claimants, and beg leave to refer the subject to the kitchen and wash house for their verdict.

R. Harmon, Wheatland, Monroe, specimens of improved white flint wheat.

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Martin Smith, of Wheatland, Monroe, a specimen of improved flint wheat, of the largest and finest berry ever exhibited in this State, which if it will re-produce its like, is a very valuable improvement. $5.

Chas. Lee, of Milo, Yates, a specimen of Calafornia corn, measuring 15½ feet in height. The exhibitor had to arrest its progress for fear he should be unable to harvest it.

Jerome Darling, Adrian, Michigan, a revolving bellows, which, from inspection of its principles, promises to be a valuable invention. Diploma.

Pennock & Pierce, Chester county, Pa., a machine for sowing wheat and small grains in drills, which, from its construction, will perform well where such an operation is desirable. Diploma.

J. Sangster, of Buffalo, wood carvings of the entrance into the ark; Washington contemplating an attack; the Lord's Supper; Expulsion of Adam and Eve, and Sampson carrying off the gates of Gaza, exhibiting a wonderful degree of genius, in a boy of 14 years of age. $5.

L. B. LANGWORTHY,
JNO. H. ROBINSON,
S. B. CUSHING,
C. S. BUTTON,
Committee.

PAINTINGS AND DRAWINGS.

The committee on paintings and drawings respectfully report:

That upon an examination of the several subjects submitted to their inspection they have determined as follows, viz:

That the landscape in pencil, numbered three (3—), 456, is the best of its class. Drawing by Miss Cox.

That the crayon drawing, numbered 2, 456, by Miss Conklin, is the best drawing of its class; and that the frame of daguerreotypes, numbered 40, executed by Gavit & Cooke, is superior to the other specimens exhibited.

The committee advise the granting of diplomas in the cases specified.

T. R. WALKER,
Chairman of committee.

September 17, 1846.

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ORNAMENTAL, SHELL, NEEDLE AND WAX WORK.

Shell work, Miss L. C. Morris, Auburn, $3.

Wax work, Miss L. C. Morris, $5 and diploma. Mary F. Snow, $3.

Needle work, fire screens, Delia M. Colvin, Syracuse, $5. Lydia S. Russell, $5.

Ottoman covers, Delia M. Colvin, $3. F. E. Thornton, Fleming, $3. Mrs. N. M. Stephens, Elbridge, $3 and diploma.

Table covers, Mrs. Geo. W. Patterson, Chautauque county, $4 and diploma.

Groups of flowers, Mrs. John Porter, Auburn, $3.

Lamp mats, Mrs. W. G. Pierce, Auburn, $3. Mrs. W. Brockway, Brockport, for variety of worsted work, diploma.

Worsted rugs, Mrs. Lucas, Auburn, $4. Mrs. Roxana Cottle Huston, Buffalo, $2 and diploma. Mrs. Cornelius Walcott, Elbridge, $3.

Fancy chairs, Mrs. Sarah Harbottle, Auburn, $1. Mrs. Joseph Sabin, Syracuse, diploma. Ladies of Utica female academy, $3 and diploma.

Handkerchiefs, caps, &c., Mrs. V. R. Voorhees, Amsterdam, $3. Miss Abby Allen, Camden, $3. Miss Green, Jordan, (child's dress,) $1.

Fancy painting and needle work, Mrs. Wm. A. Dutcher, Milo $3 and diploma.

Embroidered shawls, Mrs. Alanson Benson, Skaneateles, $3. Mrs. John G. Wheeler, Sennet, (Thibet cloth,) $3.

Embroidered and stuffed quilts, Mrs. Joseph Beach, Auburn, $3. Mrs. Rebecca Johnson, Syracuse, $2. Mrs. Roxana C. Huston, Buffalo, diploma. Mrs. Hiram Hubbard, Canandaigua, $3. Mrs. Eliza Harmon, Wheatland, $2. Miss Mary J. Patty, Auburn, $2 and diploma. Mrs. D. C. Munroe, Elbridge, $3. Mrs. William C. Sheer, Phelps, diploma. Mrs. C. A. Frost, Delhi, diploma. Miss L. C. Morris, Auburn, $1.

Silk patch piano cover, Miss Harriet A. Williams, Rochester, $2 and diploma.

Embroidered silk suspenders, Mary C. Van Buren, Albany, $3 and diploma.

Ornamental bead bell rope, Mrs. Millard Fillmore, Buffalo, $5 and diploma.

Fringe mittens, Mrs. S. T. Stebbins, Homer, $1 and diploma.

Lace veils, Miss Abbot, Auburn, $3.

Worsted card portfolio, Miss Matilda Davis, Buffalo, $2.

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Ornamental and domestic needle work, Mrs. V. R. Voorhees, Amsterdam, diploma, and for table covers, $2 and diploma.

Bonnets, Mrs. Cook, Syracuse, $3 and diploma. Mrs. F. H. Graham, Auburn, diploma. Miss Atwood, Salem, $5 and diploma.

Lace caps and capes, Mrs. Cook, Syracuse, $3 and diploma.

Fancy worsted chair, Miss Mary F. Snow, Auburn, diploma.

Lamp Stand, Mrs. B. F. Hawks, Phelps, diploma.

Mrs. BELA D. COE, Buffalo,
Mrs. HANSON COX, Auburn,
Mrs. ALVAH WORDEN, Canandaigua,
Mrs. GEO. VAIL, Troy,
Mrs. WM. W. WATSON, Geneva.

MISCELLANEOUS ARTICLES.

The undersigned, a committee appointed to view articles omitted to be viewed by the appropriate committees, report:

That they have viewed two beautiful specimens of silversmith's ware, consisting of table silver ware. One of the committee being a practical silversmith, places the committee in a position to judge of the merits of the ware submitted to inspection. The specimens are very beautiful and workmanlike, and deserving of great praise.

The committee had also called to their attention some admirable specimens of gold and silver pencil cases with gold pens. The committee have tried the pens, and have found them excellent. The cases are neat and tasteful, and furnish a pen and pencil in a very compact form, and are worthy of high commendation.

The committee also had submitted to their attention a plate case of full upper teeth, to be inserted on the atmospheric pressure principle. It is a most beautiful specimen of dental work.

They also viewed a specimen of quill pen nibs, which are worthy of the attention of those who do not, or cannot use metallic pens.

There was also submitted to inspection an ingenious contrivance, to be attached to the bottom of doors, to exclude the air. It needs but to be seen to be appreciated.

The committee award to Willard, Hawley & Co., of Syracuse, $5 and a diploma, for beautiful silver ware.

To F. W. Maffet, Syracuse, $5 and a diploma, on beautiful silver ware.

To B. R. Norton, of Syracuse, $5 and a diploma, on gold pens.

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To Washburn & Robinson, of Taunton, Mass., a diploma on pen nibs.

To S. W. Smith, of Auburn, a diploma on an excellent specimen of dental work.

To Wm. Genet, of Syracuse, a diploma on Gifford's patent weather strips for doors, to exclude air.

A. STEVENS,
JNO. H. CHEDELL.

Auburn, Sept. 18, 1846.

REPORT OF THE COMMITTEE ON STOCK OWNED OUT OF THE STATE.

The committee on stock owned out of the State, would respectfully report:

Horses and Sheep were the only foreign stock exhibited. "Gifford Morgan," a dark chesnut stallion, fourteen hands and three inches high, aged twenty years, was exhibited by Mr. F. A. Wier, of Walpole., N. H. It is claimed on the part of his owner, that this horse possesses the celebrated "Morgan" blood in greater purity, than any other now living.

"General Gifford" 6 years old, got by the above named horse, was exhibited by Mr. C. Blodget, of Chelsea, Vt. In his size, figure, action, and color, he closely resembles his sire. Both are exceedingly compact horses, deep chested, strong backed, with fore legs set wide apart, and carrying their heads, (which are small, with fine, well set eyes,) high and gracefully, without a bearing rein. Their action attracted the marked admiration of all. This breed are reputed to possess great bottom and hardiness, and everything about the two presented, goes to prove that their reputation in this particular is well founded. For light carriage or buggy horses, it would be difficult to equal them, and if by crossing with prime large mares, of any breed, size could be obtained in the progeny, without losing the fire and action of the Morgan, the result of the cross would be a carriage horse of very superior quality. Your committee are not aware of the extent or result of such crosses, in the region where the Morgan's originated. Unless experience has already demonstrated their inutility, we would recommend to our horse breeders, some well considered experiments, limited at first, to test the feasibility of engrafting the Morgan characteristics on a larger horse.

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Of *sheep*, four lots, all claiming to be thorough bred Merinos, were exhibited as follows:

De Witt C. Doane, of ——— Vt., twelve rams.

Messrs. Rockwell & Sandford, of Cornwall, Vt., forty-four rams.

Messrs. Bingham and Jones, of Cornwall, Vt., fifty rams.

Mr. R. V. Horton, of Hubbardton, Vt., thirty rams.

Your committee will not attempt to enter upon any detailed description of each of the several lots above enumerated. Shades of difference were observable in the quality of the lots, and between individuals of the same lot, but all belong to the same general family, and bore the same general stamp. The fleeces of many of them were heavy, with wool of a medium quality. On most of them, however, the fleece was uneven, giving coarse wool, and on the coarsest individuals, jar or hair on the thighs, dewlap, and wrinkles.

Your committee believe this a very serious objection to sheep bred for wool growing purposes. They would recommend to the owners of the several flocks from which these were drawn, a careful effort to improve the quality andevenness of their wool, without materially diminishing the weight of the fleece; an object, which observation has satisfied your committee is attainable, with little difficulty.

A pen of ten Saxon ewes were presented by Mr. Samuel D. Colt, of Pittsfield, Mass. Their fleeces were even, heavy for this variety of sheep, of good fair quality, and the form and style of the sheep excellent. They possessed too, that similarity, that family resemblance which constitutes one of the first proofs of good breeding.

Your committee, on behalf of the society, would tender thanks to the spirited breeders of stock from other States, who have exhibited their animals on this occasion.

HENRY S. RANDALL, *Chairman.*
JAMES M. ELLIS,
OTTO F. MARSHALL.

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REPORTS OF COMMITTEES

AT ANNUAL MEETING, JANUARY, 1847.

REPORT ON MANAGEMENT OF FARMS.

Mr. Beekman as one of the committee to whom was referred the communications, in answer to the circular issued by the executive committee of the New York State Agricultural Society, to ascertain which was the best cultivated farm in the State, so far as information could in that way be obtained, begs leave to report: That only two communications were received, and as he would recommend the publication of both, he conceives it unnecessary to make abstracts from them, or comment upon their contents. It may be proper however to say, that they, in his opinion, are far from being such communications as the Society had hoped to have received, from the liberal amount offered in premiums, and as they come far short of answering the several queries propounded by the executive committee in their circular issued for this purpose, it renders it unnecessary to publish the queries to which these communications were intended to be answers. But the publication of these communications is recommended, for the one throws some light on the management and profits of garden culture near to large cities, and the other one, the manner in which a good, industrious, and rather more than an ordinary farmer, manages no doubt successfully and profitably a farm of about 350 acres. And whilst they would award to the owner of this farm the meed of praise to which he is entitled, yet he must be satisfied, that the details are not sufficiently ample, nor his practice sufficiently definite, to be of much benefit to the Society.

They proposed a regular set of queries on each of the following subjects: upon "Soils and their management," "The making and application of manures," upon "Tillage Crops," "Grass Lands, &c.," "Domestic Animals," "Fruits," and "Fences and Buildings." These questions, to which answers were required, embrace the whole series of husbandry, and the information sought for, and indispensable to their object, to impart value to the communications, must be clear,

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definite and instructive. Upon each of these subjects, they did not expect an elaborate essay from a farmer, but they did wish, that on at least one subject embraced in the queries, which number to 39, so much light might be shed as would enable them to say, that one or more points, at least one, by that man's experience, was practically settled. The great object with the Society is to be practically useful, and they did hope in offering premiums for the best managed farm, they would draw out communications as evidences at once of the advancement of agriculture as an art, and of the critical knowledge of those who practice it. If in that respect they have been somewhat mistaken, they still hope, and with good reason, that the subject is now, and has been some time, undergoing an investigation so thorough, that the end must be a great improvement upon our former practice.

Surely in a soil so naturally fertile, and with a climate so well adapted to make that fertility productive, we will not be content to raise 14 bushels of wheat, 26 of oats, 16 of barley, 15 of peas, 9½ of rye, 25 of corn, and 90 of potatoes to the acre, according to the reports made last year, as ascertained by the Census, when, with better farming, our Agricultural Societies in many portions of the State, have awarded premiums for 60 bushels of wheat, 45 of peas, 40 of rye, 130 of corn, and 500 of potatoes. The disparity of what is general, and what has been done, as we see by the actual returns, is too great for us to remain at ease, and not only so, it is a reflection upon us as a nation of husbandmen, and will be the more marked at this time, when the whole world is calling upon us for bread. What a time is this, for the advancement of America, when every article of food is so anxiously called for. If our old worn out lands were now restored to their vigor, it would add millions upon millions to our national wealth, at the same time that it would have wiped many a tear from the eye of suffering humanity.

We have then every possible inducement to act as wise men, and although great crops cannot always be raised in every locality and upon all soils, yet no man can for a moment doubt, that as a whole, it would not be doing a very remarkable thing, if we at least doubled upon the products as given to us by the last census.

An American is sober, industrious, intelligent. He is well acquainted with the use of both his head and his hands. He has set the world an example of a simple and efficient government. His ingenuity is fast driving from our shores, the mechanical and manufacturing skill of Europe combined. His intercommunications, both by water and land, whether by steam or lightning, is almost annihilating time, and he looks forward with unhesitating forecast to the still greater and rapid improvements which are to follow, for he be-

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lieves in the progress of events when conducted by the divinity of mind. Shall agriculture, then, among all our employments, and which ought to call out all our energies, be left to her own unguided way? No; I know better. The word has gone forth, that as a people we are to be as numerous as the sands on the sea shore, and for food for that mighty mass, we can look to no country but our own.

But how is this to be accomplished? To raise double the amount we now do upon our old soils is not so easy a task, however much it may be desired. Still, observation tells us, it may be done. That old soils can be renovated, with a good deal of facility, that it only requires a little industry, patience and care, together with a sufficient but not large outlay of capital, and it will in a short time be accomplished. Look at the manner in which our large crops of grain and roots are raised. Simply by the application of the proper food to the plant, and that result is almost invariably attained. What is that food? Every body answers manures. That point then is settled. The next question is, how can we obtain them. In the first place, we must look to our barn yards, see to their proper formation, and next, that we use due diligence in collecting the proper and abundant material. That it is not enough that we take care of all we necessarily gather from our animals, although even that is often very much wasted, but that we fill our yards with every species of vegetable refuse, we can by a little labor gather.

Suppose one week or two weeks in the course of the autumn, when other farm avocations do not press, were to be devoted to this business. It would add very much to the quantity we should be prepared to deliver to our fields and our corn crop, to our meadows and our spring crops, the ensuing season. A week or fortnight thus bestowed would be most profitably employed, and the succeeding winter we would have fatter pork in the barrel, better potatoes in the bin, more and a fuller granary than ever. One success leads to another, as it gives us the means for a larger accumulation of manures. Let me make this suggestion to carry out this idea, and which almost every farmer in my vicinity can accomplish, and I presume many others in other parts of the State. We can cart into our yards in the months of September and October, muck, the common term for peat, so as to make a layer of it when spread, of about one foot in thickness, and if you have not ashes or lime first to spread over it, then turn your stock upon it and scatter, as the case requires, your refuse litter over it. What a beautiful bed of compost you would have in the spring, and it would make a farmer feel rich, not only to see it going off to his fields, but to count the number of loads each yard would yield

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him. This would be a first step, a great step, towards increased crops, and by its annual and persevering continuance, be the philosopher's stone, that would convert all it touched into gold. We cannot enough press upon farmers, the necessity of the abundant application of manures. It is this, that enables gardeners about cities, where the manure is abundant, and if you turn to Mr. Van Sicklen's report, you will see it enabled him to realize between two and three thousand dollars profit, from between 60 and 70 acres of land, with an expense, however, of $600 for manures. It is this, that has doubled the produce of English and continental husbandry, and if you turn to the reports you will see they more than double us in in their products, and they feel so much encouraged by increased returns, that they look forward to the time when they will be enabled to raise still much larger crops, as in a few instances they have obtained 80 bushels of wheat per acre. And here let me remark, as I have done before on another occasion, that the powers of the soil are almost illimitable. It is only for man to farm with intelligence as well as industry, and he will be a large recipient of the rich bounties of Providence. Let the subject of manures then, be the object to which we direct our thoughts and attention, and it will not be long before we in our annual agricultural returns, will be able to vie with any country in Europe.

Thus far we have touched upon barn yard manures. By that general term we include all the excretions of animals, liquid as well as solid, together with all the modern improvements to retain and concentrate their powers. Independent of the storehouse of our barn yards, however, modern chemistry has opened new resources to aid in the growth of our crops. All our growing agricultural productions have been analyzed, to ascertain their component parts, with a view, if possible, that when that point is gained, we may advance another step, and that is, to supply them with such food in a concentrated or mixed state, as will yield to the growing plant that element or substance, most congenial to its rapid and full development. This is an idea of modern times, and bids fair to shed much light on the physiology of such grains and vegetables as are used by man as food, and ultimately to aid essentially in their successful cultivation. It is true, that on this subject, we have not yet come to the most satisfactory conclusions, but there can be no doubt, from the success which has already attended this branch of investigation, that its further prosecution will develope resources in aid of agriculture, not even now dreampt of in theory. We begin to understand how gypsum, ashes, lime, bone dust, guano, &c. &c. &c., operate, of which we were before ignorant. But as this branch of agricultural chemistry is slowly but

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surely developing, the farmer, guided by its light, and taking advantage of its effect on his growing corn, which our experience has already dictated, has additional resources, when his barn yard is exhausted. The Chinese, it is said by those who have recently visited them, are the best agriculturists in the world. They have long used manures in a concentrated form, and from its small bulk, and light weight, it is carried to great distances, and is an article of daily traffic. That article is Poudrette, with whose use we have lately become acquainted, but which they have used, it is said, for centuries. With us, it has been sufficiently tested, however, to satisfy the most sceptical, that when its powers are well understood, it is most wonderful as a manure. As time advances, new substances will constantly offer, and new developments be made. We have every thing to hope for from this branch of the subject, and the great revolution it is yet to make upon our farming, both as an art and science, the enthusiast, in my opinion, cannot at this time compass, even by the greatest stretch of his imagination.

I have just read an article by Dr. Gardner, of New-York, upon concentrated manures. I trust that article will be embraced in the present volume of our transactions. He proposes in order to reduce them into a concentrated state, to burn them and apply the residuum, that is the ashes, which is left, and which contains all the principles of which that class of plants are composed, to such plants as require their aid. Heretofore the laboratory has been used as the most useful analyzer of the soil and its products. But now a question is here started, and that is, how far the simple process of burning may not supersede the laboratory, and the further use of removing heavy and bulky substances, by bringing this simple process to our aid. The subject is certainly treated somewhat in detail and with a good deal of ability, and I trust that every reader will look over it leisurely and without prejudice, as it is advanced as a suggestion, and not for immediate and unhesitating adoption.

My great object in making these remarks is, to draw the readers attention to the consideration of manures, as they constitute the basis of all good farming, for no man, however skillful he may be in external accommodations of himself or stock, or whatever arrangements he may make to create conveniences upon his farm, can give us the full, fair, rich and satisfactory details, so much wanted by this society, and so useful to his brethren, as he who makes a full and liberal use of manures. Should the Society think proper once more to offer the liberal premiums of the last two years for the best managed farm in the State, I would advise the applicants for them, o answer with as much explicitness as possible the queries pro-

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pounded, so that the Society, if they cannot be informed upon all the subjects upon which information may be sought, can at least have some data established upon some given points, which hereafter may be considered as reliably established. We desire to get out of the field of conjecture, into the narrower limits of facts, and in doing so, we proportionably advance the cause of agriculture and the prosperity of man.

I would recommend the executive committee to award a set of Transactions to Mr. Van Sicklen and to Mr. Callanan.

All of which is respectfully submitted.

J. P. BEEKMAN.

JAMES CALLANAN'S FARM.

New Scotland, Albany County.

JOEL B. NOTT, Esq.,

Cor. Sec. N. Y. State Ag. Society.

In answer to the several interrogatories of the New-York State Agricultural Society, relative to the condition and management of farms, I respectfully submit the following answers:

1. The farm on which I live, contains in one body, about three hundred and fifty-six acres, twenty of which, with several dwellings, I have rented to tenants; about one hundred acres are wood land; there is no waste land on it, except about eighteen acres, included in the wood land above mentioned, which are of lime rocks, from which I get stone for fence, &c., which I consider as valuable as any other part of my land; the remainder is used for pasture, meadow and tillage alternately.

2. The soil on the east and west sides, which are more elevated than the middle, is of a mixture of gravel and loam, and some of which is inclined to the clayish order; the middle, through which runs a creek, is without any stones, containing marl or peat, averaging in depth, from eight inches to three feet or more, below which is clay, mostly yellow, but some blue; on the south-west, are a few slate rocks; the other rocks are lime stone, and contain wood as above mentioned; considerable many cobble stone or large gravel are on the east and west side, and occasionally I find a few small granite boulders.

3. I consider the best mode of improving my land, is by deep plowing, particularly on the up land or gravelly and clayish soil,

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and application of barnyard manure, plaster and lime, and seed often with clover, so as not to have over three successive crops on the same piece, without letting it lay under seed two or three years.

4. I plow about from six to eight inches deep; deep plowing done with care, has a good effect.

5. Succeeding crops are vastly benefitted by deep plowing; long experience proves the truth of this.

6. The subsoil plow has not been used by me, and hence I can say nothing about its utility or effects on crops, &c.

7. I am unable to say how much manure I apply per acre, as I generally apply it on several fields the same year, and then on the least fertile spots, knolls, &c., where the previous crop indicated its need; by which means it goes much further, and seems to be of more profit than to apply it abundantly on one field. My manure is made from the remains of fodder in the yard, which the cattle do not eat, from the stables and cattle in the yard, and from pens; my yards and stables being so situated, that very little is wasted. There are no cellars to my barn for its reception; nor am I in the habit of heaping it up nor keeping it under cover.

8. This question has been anticipated in the previous one.

9. I am unable to tell the exact number of loads of manure that I manufacture, and they vary from year to year, depending upon the number of stock I winter, and the size of the straw and stalks, &c. But I think they will average from three hundred, to three hundred and fifty, and it is all applied annually.

10. I apply all the manure from the edge of the yards, and places where it would be apt to waste during the summer, on my corn ground, in a somewhat green state, and then plow it under before planting, as I think it goes much further this way, though I know that the same quality in bulk, in a compost state, is more valuable. I also use some of the manure on my spring grain after it is plowed, and before it is sowed, so that it is dragged under with the grain; the remainder of my manure remains together in the yard till fall, when it is more decayed, and I then use it in the same manner on the fall grain, as I do on the spring grain. I have tried it almost every way for many years, but I think this way gives the best satisfaction.

11. As regards this question, I think I must answer in the negative, as I always try to save all I can, and do not know that I could increase it essentially with a little extra trouble.

12. I have used considerable lime, which I burned in my kiln, from my lime stone, of which I have an abundance, but if applied by loads in heaps, or in large quantities, it injures instead of benefitting

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the crops. Still if used in moderate quantities, it is very good; my land, or a great portion of it, contains as I think, a sufficient quantity of it. I also use considerable plaster, as it is much better on my soil than lime. All my ashes, chip dirt, pumice, cobs, &c., are also used with various effects, depending upon the season and the nature of the land. Plaster seems to be of much benefit to my lands and crops; I use it on the corn as soon as it is up, and sow it broad cast on my pasture fields and meadows in the spring of the year, or about the first of May, and on the grain which has been seeded about the first of June, particularly to benefit the seed. But I have never used salt, nor guano as a manure.

13. I calculate all of my farm, except the forty acres rented this year, and the one hundred acres of wood land, as two hundred and ten; ninety acres of which is the bottom or meadow land, properly so called; but then I can raise good grass or hay on any of my land, and also grain on the meadow land, except winter grain. As the weevel has been very destructive in this vicinity, for several years past, I have raised scarcely any winter wheat lately; before that time, wheat was my principal crop; now I turn my attention to hay, corn and spring grain. I have thirty acres of rye, forty of pasture, twenty acres of corn, and thirty acres of oats, barley, potatoes, &c.

14. I generally plant my corn from the tenth to the fifteenth day of May, and from two and a half to three feet apart, each way, and from two to four kernels in a hill, experience having taught me that the stalks must not choke one another, and that one or two stalks in a hill is better than four or five. I have now from one kernel, a stalk, on which there is nine ears, and one on which there is eleven, all of which have grain on; and in selecting my seed corn, I always take what we call twin ears, those of which two or more ears are found on the same stalk, which I pick off first, and twist it up for seed. I sow about two bushels of oats, and two bushels and a half of barley to the acre, which are generally sowed on the corn stubble; corn is planted on the sod and on the rye stubble. I have practiced of late, and I find it very advantageous, to plow considerable in the fall, particularly the low or meadow land, which runs out, as is commonly called, every five or six years, and which I plow up in the fall, either for corn, or barley, or oats, in the spring. My general rule about rotation of crops, is now, since I have been prevented from raising wheat, first corn, then barley and oats, then rye, and then seed it down; let it lay two years, and then commence with corn again; but this is not invariable. My grain is cut with a

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cradle, usually, before it is dead ripe, so as to prevent it shelling much; my corn is plowed out with a corn plow, and hoed twice. This year I measured one acre particularly, and found it yielded about ninety-three bushels; about six acres in the same lot would do the same. I think the whole crop would average fifty-one bushels the acre; oats about forty-eight bushels per acre; barley about thirty; rye about twenty-two.

15 and 16. These questions have been answered before.

17. My potatoes were some affected with the disease or rot, last year; but this year I have not discovered anything the matter with them, nor have I been able to ascertain the cause of the rot.

18. Timothy and clover are the only grasses I use. The large kind is the best for manure, and the smaller kind for pasture. I generally use a middle kind, or a mixture of both. My upland I seed with one-third timothy and two-thirds clover, and meadow lands with this proportion reversed. I sow from six to eight quarts per acre, by hand, about the middle of March, on the winter grain and on the spring grain after sowing it.

19. I mow about ninety acres of land, but I am unable to tell what it all averages per acre, as my stock is kept on it, which some winters takes more than others. One lot of it though, containing thirteen acres has been sold, and weighed twenty-eight tons and fourteen hundred; but this would average rather better than the rest this year, but as the rest is not yet weighed, I am unable to tell how much I have this year; two years ago, though, from about the same number of acres, after wintering a larger stock than I have now, I sold one hundred and twenty-seven tons, averaging about ten dollars per ton. I cut it as soon as it is nicely out of blow, and as soon as it is dry take it at once to the barn without cocking it, as many do, believing the risk of its getting wet with the rain and injury thereby, is equal to the advantage to the hay by cocking it, and then I save the labor, which is considerable of an item at that time of year, as one can quicker pitch it on a load when raked in winnows by a patent revolving horse-rake, than he can put it on cocks. By this means I think I save considerable time and expense.

20. With the exception of about six acres of my meadow land, which lies on the strips along the creek, it is all suitable for the plow; and my mode of keeping it good grass land, is to plow it up every five years, and raise two crops on it, and then seed it down again.

21. I have never practiced irrigating, and hence can say nothing about its effects.

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22. Nor have I cleared any low or bog land, unless it is a few low places or swails, in which I have dug ditches and filled them up nearly to the surface of the ground with round stone from the upland, to drain off the water, which is an excellent way to dry them.

23. I have three fat cattle, two yoke of working cattle, twelve milk cows, four young cattle, and six horses of my own, besides I pastured from ten to fifteen head for others, this year, on my farm, besides sixty sheep and thirty-three hogs. My breed of cattle is a mixture of the Durham and common, or rather Dutch. I do not think the English, although they are better looking, are so profitable, or as good for milk as are the half bloods, or those which are not thorough bred.

24. This question is substantially embraced in the previous one.

25. I think stabling is the most economical and best way to winter them. I stable my oxen, and weakest cows all winter, and the remainder of the cows are put up after the first of January; the remainder of my cattle are fed in the yard, and under the shed out of troughs, except the calves, which I keep in a pen or warm yard by themselves, and let them have water twice a day.

26. I pay but little attention to the amount of butter and cheese manufactured, as my wife generally has the avails of them.

27. I have sixty head of sheep, which are a mixture of the Bakewell and Merinos; my experience proves that they are the best or most profitable, taking into consideration the mutton, wool and keeping. I think I raise as many lambs as I have old sheep. I have not lost a single sheep in several winters, nor have I lost over a dozen in twenty years. My sheep are wintered in a yard, surrounded by a high wall, over a part of which is a shed to shelter them, which adjoins my barn yard; and when my cattle are in the stable or out of the barn yard, they are let in to pick up the heads of the straw which the cattle may leave, and have a chance to go to the cribs. I feed them on hay, straw, and corn stalk tops, which are cut when the corn is about ripe, or before the frost hurts them, and well cured, and they will average about one dollar and fifty cents or two dollars per head to the butcher.

28. This question is answered in the preceeding one.

29. I have ten swine of last spring's litter, and three of the spring before, making ten which I winter. I have had thirty-three the last year. I generally butcher the greater part of them early in the fall, when they average about one hundred pounds a piece. The rest I keep till about the first of December, when they will weigh from three hundred to three hundred and fifty pounds a piece.

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30. No experiments have been made by me with sufficient exactness to enable me to speak with certainty as to the relative value of roots in comparison with Indian corn in the fattening of swine. I generally feed my hogs on pumpkins, with the seeds taken out, before and a short time after I put them up, and then feed them on corn and swill, which I think is the most profitable food for them, taking into consideration the price of other produce and the labor.

31. I have about five hundred apple trees on my farm, about one hundred and fifty of which are grafted, greenings, gilliflowers, spitzenbergs, pound sweetings, and many other varieties; the frost last spring destroyed nearly all the apples about here, so that I had but a very few this year. A few years ago I manufactured about one hundred and fifty barrels of cider from my apples, besides selling many by the barrel.

32. I have several kinds of plums, pears, cherries, &c., but as they do not seem to flourish well, I do not pay so much attention to them, or at least do not make a business of raising them for market.

33. A few years ago the apple tree worm was quite destructive, but there was but a few last year; my plum trees seem to suffer much from insects, the limbs seem to be poisoned by a sting, when a black rough nob raises on them, apparently filled with small insects. I have not been able to discover any effectual mode of destroying them.

34. I generally trim or prune my trees annually; see personally to setting out young ones as the old ones decay, or occasion may require.

36. I have five dwellings for tenants, one of which is a new brick one, besides two large dwellings, one of which is also rented with a new barn and outbuildings connected therewith, and painted red. The house in which I live is of brick and stone, two stories high, built three years ago, and twenty-six feet wide by fifty feet long; a barn is connected with it of fifty by fifty-four feet, the posts on the sides are twenty-two feet high, and it has two floors, and large hay bays; the lower floor is entered by doors in the gable ends, and the upper one in the sides. It is a barn to ride in over head, as it is commonly called. It is situated nearly on the level, and two large bridges are made, all of stone and dirt, one each side, so that loads can be driven through it on the upper floor; the doors to the upper floor open just under the roof, with which I have sheds and stables connected to shelter and stable my cattle. Conveniently situated is my hog pen, twenty feet by thirty; wagon house of the same size, on the second floor of which I keep so much of my grain as I cannot keep handily in my grainery which is in the barn. Also I have two hay

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presses, one in a building expressly for it, thirty-six by forty feet; it is called a half circle hay press, the other is in the same building with my cider mill, which is forty by fifty-six feet in size; besides a corn house, carpenter's shop, wood house, stone smoke house, blacksmith shop, &c., and also a hay barn, conveniently located in the meadow, of twenty by thirty feet. All of my buildings have substantial stone foundations under them. Within a hundred yards of my barn and house runs a creek of pure water, which never fails in the dryest summer to have plenty of water, and which runs nearly through the centre of my farm; this is convenient for my cattle in the winter, and together with several springs and streams running into it, enables me, in the way I have my fields fenced, to have water in nearly every one of them.

37. My principal fences are stone walls, of which I make enough new every year to take the rails and mend the rail fences through the woods, &c. Through my meadow land I construct what we call a slat and post fence, in the following manner: I first dig a ditch from a foot to fifteen inches deep, which I fill up to the surface of the ground with round stone, from my upland; then I set my posts and lay on them the flat or lime stone, of which I have an abundance, about three feet and a half high; then through the posts on the top of the wall runs two slats, six inches in width. This is the best fence I can make, as no sheep or cattle get over it. By digging the ditch and filling it with cobble stone, it answers two purposes; one to drain the land, and the other to prevent the frost from heaving the wall; of this kind of fence I have nine hundred and nineteen rods, costing about one dollar and fifty cents a rod. I have three hundred and nine rods of wall, five feet high, with stakes, and two rails on top, costing about the same; and I have two hundred and eighty-four rods of full six feet wall, which is far superior to any other wall I ever saw, and which cost about two dollars a rod, making the whole length of stone wall five hundred and ninety-three rods.

I generally take considerable pains with my wall, experience having told me that by so doing it will stand a great many years longer, and even then it will cost nothing to repair them but the labor of laying up the stones again. I lay from fifty to a hundred rods of wall a year, for which I draw the stone from my rocks in the winter with the sleigh, which I have piled up in heaps during the spring and fall. My fences are in an excellent condition, considering the number of them; besides the stone wall I have some post and board, and the rest rail fence. My gates are generally swinging gates, having a large gallows frame over them, of which kind there are

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twenty-two in number. Within the last eighteen months I have paid considerable attention to my fences, creeks, ditches, &c., rather more in proportion than I have to my stock and crops; and I think I can safely say, I never saw a farm more conveniently situated as to water, buildings, roads, &c. It lays partly in a valley, similar to a shallow basin, with woods on the east and west sides, and a creek running through it from north to south.

38. My farming operations are not guided to a very great extent by actually weighing and measuring, nor are they registered very minutely by daily accounts.

39. The annual expense of improving my farm has never been kept with a precision that would enable me to strike an accurate balance of debt and credit. I generally know, however, the amount of net gain every year; but I have no doubt it would conduce to close observation, and to many be very beneficial, though I think I would not be able to make more, as I go to no more expense than is essential.

Respectfully yours,
JAMES CALLANAN.

New Scotland, Albany Co., N. Y., Jan. 14, 1847.

ALBANY COUNTY, ss:

James Callanan, of the town of New Scotland, Albany county, being duly sworn deposes and says, that the affidavit subscribed by him which is hereto annexed, is substantially true to the best of his opinion and belief.

JAMES CALLANAN.

Sworn to this 18th day of January, 1847, before me.
H. WYMAN,
Commissioner of Deeds.

JAMES VAN SICLEN'S FARM.

Jamacia, Long Island.

STATE OF NEW YORK, QUEENS' COUNTY, } *ss:*

The undersigned, deponent and applicant for the New York State Agricultural Society's premium on farms for the year 1846, being duly sworn deposeth and saith, according to the best of his knowledge and belief, that the farm whereon deponent resides and cultivates the same, in the town of Jamacia, Long Island, in said county, is owned by him, and contains eighty acres of land; about twelve

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acres being woodland, none waste land, and sixty-eight acres thereof improved land; the soil rather inclined to sandy loam; no limestone, nor rocks. That deponent considers plowing to a proper depth of from six to eight inches, and ashes in its first state to commence, and to be followed by horse, barnyard and street manure, best for the soil of his said farm; and has not had experience to answer fully the remaining questions as to soils, &c.

Manures. Deponent usually applies from 15 to 20 loads (30 bushels per load) per acre, varying according to the condition of his land from time to time, or change and requirement of crops; that he manages his manure mostly in compost, not kept under cover, and has not cellars under his barns or stables for receiving manure; that all his manure (excepting what is made upon the farm) he purchases in the city of New York, manufacturing annually 150 loads; that the cost of the manure last year applied was $600, and is about the average expense and quantity of several previous years, 5 to 600 loads annually, mostly applied in compost; that he prefers manure altogether in a rotten state; that he could not essentially increase his supply of manure *beneficially* by a little extra labor; that he has not used other manures than those in common use.

Tillage Crops. Deponent tills 67 acres of land; occupied with asparagus, rhubarb, strawberries, potatoes, hay and grain of all kinds. Of asparagus 5 acres, rhubarb 1 acre, strawberries 2 acres, potatoes 10 acres, wheat 8 acres, half acre with beans, peas and squashes; residue of this land, about 4 acres, used for pasture. Seed wheat sowed from the 25th to the 30th September, from a bushel and a half to a bushel and three pecks per acre. Potatoes planted from the 1st of March onward to the middle of April, as early as seasons admit, and from 10 to 12 bushels to an acre. Sow 4 quarts of timothy seed to an acre. Clover seed sow 5 to 6 pounds to an acre. After taking off crops of potatoes and like vegetables from the fields, plow and manure for wheat, and after this first plowing, a second plowing in the manure. Plant potatoes in drills 2½ feet apart, 4 to 6 inches deep, turned under with the plow; harrowed lightly just before coming up, and again plowed when the stems are 4 inches in height, and then hoed. Sow timothy seed directly after sowing wheat; and sow clover the following spring. Harvesting, usual method, with cradle and scythe. Product of wheat, 25 bushels per acre. Potatoes mostly dug for early market, before ripe, or otherwise would yield about 200 bushels per acre. Strawberries the past spring produced 7,000 baskets from an acre and a quarter, the other three quarters of an acre having been planted in the spring. Rhubarb planted 4 feet square, yielding 6,036 bunches to the acre—ma-

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nured every spring. Corn estimated 35 bushels per acre; twice cross plowed both ways, and hoed once. Cannot get an exact average per acre of asparagus, but the estimate of the whole crop to follow will show among it the product of asparagus the past season. When potato crop comes off the land, use about 15 loads horse, street and barnyard manure to an acre for wheat, the potato crop having had 15 to 20 loads previous spring; 5 loads of street manure chiefly, to each acre of corn. For corn, wheat and potatoes, cover manure 4 to 6 inches in the earth; and eight inches for rhubarb. Potatoes some affected with rot the two past seasons, but loss not material; and not any certain knowledge of the cause of the disease or remedy against it.

Grass lands. Deponent makes use of timothy and clover as stated in foregoing, with the quantity of seed applied and manner of seeding. Same answer as to part of question 19 in part. Cut hay after it is out of bloom; cure it sufficiently in swarth if weather permit; rake and cart to barn same day, and then add 4 quarts of salt per ton. Cock hay in bad weather until better time to cure. Not any mowing land upon this farm unsuitable to plow. Answer is No, to questions 21 and 22.

Domestic animals. Deponent keeps in winter from 6 to 8 head of cattle for making manure by eating coarse and unsaleable fodder; and in summer 4 cows for family use and dairy purposes. Four horses; these animals of best quality, of usual kinds, but not of peculiar breeds. Answer No to question 24. To winter stock, best and cheapest method to let them shelter under the hovel; watered once daily; fed on coarse fodder. Not any estimate kept of the amount or quantity of butter made upon this farm; and no cheese manufactured. No sheep. Six swine kept for fall and winter family use, and same number through the winter for following season; killing them when from 16 to 18 months old. Corn is adjudged to be the best food for fattening hogs, but have not made particular experiments of relative value between corn and root crops.

Fruit. Deponent has only a small orchard, of perhaps 40 to 50 apple trees, for family, rather than for other profitable purpose, and the same of a few other kinds of fruits, insufficient in numbers and from observations to usefully answer questions 33, 34, 35.

Fences, Buildings, &c. Deponent's dwelling house, 26 feet front, by 28 rear, 1 and a half stories high; part of adjoining house, 24 by 28 feet, with shed attached. Wagon house, including corn crib, 36 feet square, with sheds attached, to keep plows harrows and farming utensils generally. Barn 50 feet square, in Dutch style. Hovel attached to barn, 50 feet front, and 24 feet deep.

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Separate building for fowls, about 13 feet square.

Smoke house, bee house, &c. Fences, excepting those around dwelling, mostly post and rail, 4½ feet high, 3 rails, in good condition, at an extent and cost unknown, but worth 50 cents each panel when new. Also unable to answer, satisfactorily, questions 38, 39.

Do not keep regular farm accounts, and therefore cannot, with anything like precision, state the annual expense and income of the farm sufficient to strike an accurate balance at the end of each year.

Market Returns,

Of the season now past, with the product on hand, November 7, 1846, estimated at current rates:

Asparagus, sold 4,286 bunches, average 13 cents each, produced,	$557 18
Rhubarb, or pie plant, sold 6,036 bunches, at average of 6 cents per bunch,	362 16
Strawberries, sold 7000 baskets at average 3½ cents, produced,	245 00
Potatoes, mostly sold, produced, and with remainder together,	1,000 00
Green corn, sold 11,000 ears, at 56 cents per hundred,	61 87
Cranberry beans, sold 50 bushels at 7s. 6d. per bushel,	46 87
Timothy seed, sold 7 bushels at $3 per bushel,	21 00
Wheat, 200 bushels at $1.12½ per bushel,	225 00
Corn, 350 bushels, at 75 cents per bushel,	250 00
Russia Turneps, 100 bushels, at 37½ cents per bushel,	37 50
Clover seed, 6 bushels,	30 60
Hay, 50 tons, average 56¼ cents per hundred,	562 00
Onions, squashes and peas, worth $40,	40 00
	$3,439 18

Expenses of the season.

Manure, with what made on farm,	$600 00	
Paid for labor, $120; our own labor worth $280,	400 00	
Expenses on road to and from market,	100 00	
		$1,100 00
		$2,339 18

JAMES VAN SICLEN.

Queens County, ss.

Personally appeared before me, the said James Van Siclen, and subscribed and made oath to the above, November 9, 1846.

THOMAS BRADLEY, *Justice of the Peace.*

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FARM HOUSES.

Report of Committee.

The committee on designs for farm houses, report, that only one application for a premium has been made, and this was by a lady. The plan is very excellent, and we award the first premium, $15, to Mrs. James M. Ellis, its designer; with great confidence, that in so doing, we are recommending to the farmer, who is about to decide upon a plan for his dwelling, one that is not only very commodious and tasty, but in view of its perfection in every respect, is economical. Durability is an important consideration, and heavy bills for repairs, coming often, are to be guarded against. Modern fashion appears to favor projecting gables, vallies in the roof, and bay windows, and in many cases cornices are embellished with hanging ornaments that soon decay and fall off. These things are not suited to the farmer. A good house, well adapted to the wants of a large household, in which is to be performed all the various operations of cooking, washing, making butter and cheese, &c., &c., and which, at the same time provides for the elegancies of life, will cost a large sum, without resorting to expensive ornamenting.

The farmer's house should be large, and should convey to the observer, the idea of strength and durability; the justice of its proportions, rather than its ornaments, constituting its beauty. We think that Mrs. Ellis has shown good taste, within the limits of proper expenditure, and in every particular has come up to our views of a first rate farm house; and who but a lady, with a cultivated mind, and who is herself the mistress of a house, and the mother of a family, should know what is demanded for the comfort of such an establishment? The communication accompanying the drawing, contains the views of the designer, and we think them so just, that we ask that it may be published.

Respectfully submitted.

GEORGE GEDDES,
J. McD. McINTYRE,
E. MACK,

Committee.

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DESIGN FOR FARM HOUSE.

BY MRS. JAMES M. ELLIS, ONONDAGA HILL.

PERSPECTIVE VIEW.

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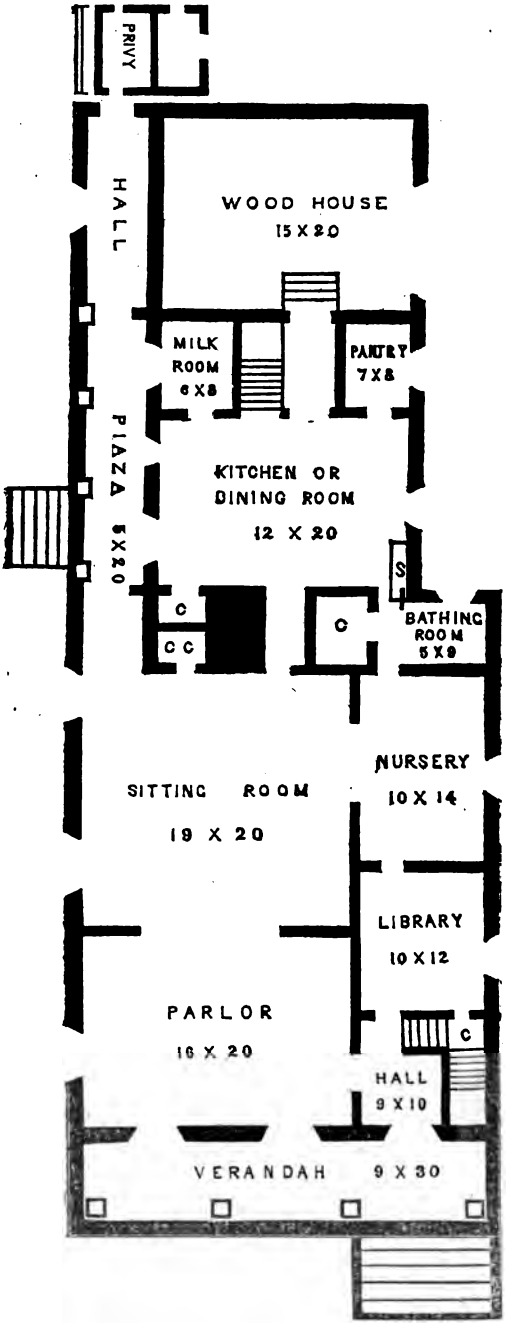

GROUND PLAN.

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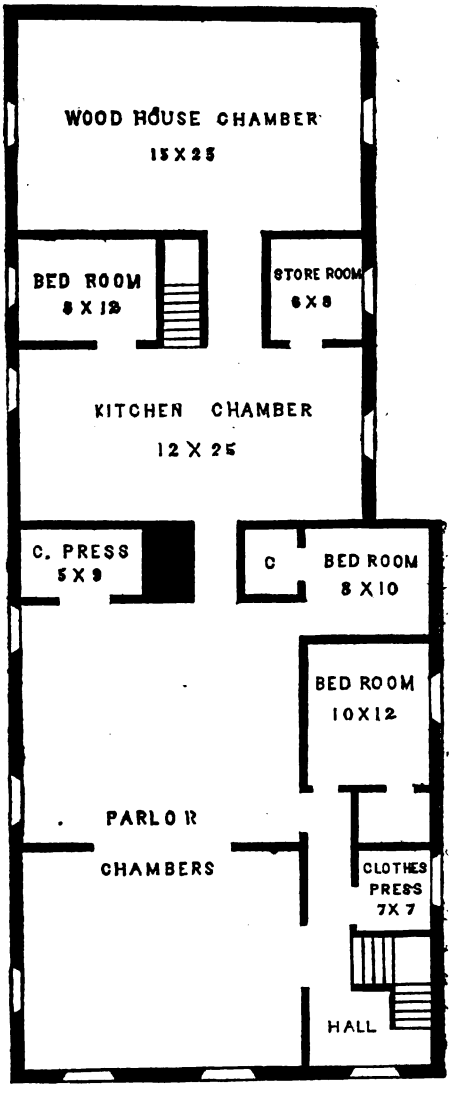

SECOND STORY.

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DESIGN FOR A FARM HOUSE.

To design a farm house, in which beauty and utility shall combine, is not a difficult task; but to design one that shall meet the wants, suit the taste, and come within the means of the *mass* of farmers, is quite another affair. There are many families who would consider a house complete if it afforded sufficient room for working and lodging, with the addition of a parlor. Others would think it very deficient if it did not contain, besides these, a library, dining room, nursery, and bathing room.

In the first place, the size of the family, and the kind and quantity of labor to be performed, should be taken into consideration. If there are a number of small children, it is very important that there should be a nursery upon the first floor, connected with a bathing room, and as near the dining room and kitchen as possible, that the mother may be spared all *unnecessary* steps in attending to her duties in these several departments. A small library is another desideratum; and a bathing room should be considered indispensible.

If but a small dairy is kept, time and labor may be saved by having suitable rooms for milk and cheese, as it is very unpleasant passing to and from a dairy house in bad weather. (The soil and situation must determine the place for a milk room; few cellars are sufficiently dry and airy for that purpose.)

In this design I think I have secured all these conveniencies without covering too much ground; and the rooms are so arranged that they may be used to suit the tastes or meet the wants of the occupant, without abridging their convenience. If a spacious parlor is wanted, it can be had by throwing the two large rooms into one. The library and hall could be thrown together in the same way, whenever the former is not needed for more private purposes. I would also have folding doors for the nursery, for convenience in case of sickness, or to be thrown open in warm weather. The library, (if one is not desired) would make a very commodious bed room for children, as it communicates with the nursery.

As my main object has been to save labor, by securing convenience, the underground kitchen is intended *only* for washing and doing other heavy and dirty work of the farm. It could, however, be used as a common kitchen, if the room in the wing should be desired exclusively for a dining room.

The house is designed for the use of a hot air furnace, consequently there is but one *real* chimney; two would be sufficient for those who

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do not like this method of warming their houses, by placing stoves in the library and nursery.

The dimensions of the house are 30 feet by 40 for the main building, and 25 by 35 for the wing, which I think will afford all the room necessary for comfort and convenience in a farm house; and if some attention is paid to scenery and location, may be made sufficiently elegant to satisfy any one who is obliged to consult his interest as well as fancy. Some might object to it as being *too large.* For those the dimensions could be reduced to 24 by 34 for the main part, and 20 by 25 for the wing, without altering its construction. But it must be remembered, that the *farmer* does not purchase his ground by the foot, and that he needs a great deal of store room, which he will find much cheaper, as well as more convenient to have under one roof; and unless it is provided in the first place, unsightly additions will be made, or little store houses erected to mar and deface the beauty of the grounds.

I have allowed 10 feet parts for lower rooms, and 8 for those above, which will make light airy chambers. I know modern taste is generally in favor of the low cottage, and their outward appearance is certainly very picturesque and agreeable; but unless they are sufficiently spacious to contain all lodging rooms on the ground floor, I should protest against them; and I think all advocates in their favor would have abandoned their predilection, had they taken lodgings in one of their *little pretty snug* chambers, during the months of last July and August.

The cistern it will be seen, is directly beneath the bathing room, and the arch so near that, a little trouble will at all times secure both cold and warm water for bathing.

An aperture of 6 by 18 inches, should be made through the floor of the milk room, into the pantry in the cellar, which will keep the milk room cool, and ventilate both rooms; it should have a trap door to be closed when necessary.

A drain is constructed in a corner of the cellar kitchen, into which all dirty water and suds should be thrown to cleanse the back drain, and be saved in the manure yard. To ensure cleanliness in the drains, the back grounds should incline from the house. I have not made an estimate as to the expense; that would depend very much upon the materials used and the mode of finishing. The scenery and location should determine on which side of the house the hall should be, also the piazza in the wing.

MRS. JAMES M. ELLIS.

Onondaga Hill, Nov. 1847.

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CHEESE DAIRIES.

Mr. Johnson, on behalf of the committee to which was referred the communications, in answer to the circular issued under a resolution of the society, relative to the manufacture of cheese, and the management of cheese dairies, respectfully reports:

That the committee have examined two communications which have been submitted to them by Newbury Bronson, of Wyoming co. and Mr. and Mrs. Wm. Ottly, of Ontario co., and they are gratified at the attention which has been given to the inquiries instituted by the society, and that the results thus far, are in so high a degree satisfactory.

The increasing importance of the dairy business, since the opening of the European markets, has encouraged our farmers, to engage much more extensively than formerly in the manufacture of cheese. The advantages of shipping only a first rate article, is now generally understood by those engaged in the shipping business. Where cheese is put up in good order, and of choice quality, it readily commands from one to two cents more per pound than a middling or tolerably fair article. This advance alone is sufficient to encourage the manufacturer to adopt such measures, as will enable him at all times to have his cheese of the requisite quality. It is important that the Society should so direct their efforts, as to secure an uniformity as far as practicable in the preparation of cheese for market. It cannot be disguised, that very many of our dairymen, do not as yet, prepare their cheese in such a manner as to obtain the confidence of shippers.

The Society, in submitting the inquiries to the dairymen, hoped to obtain such information, as to the best location, on account of climate, soil, grasses, &c., for the production of a superior article, as would lead to valuable and important results. The committee believe, that if these inquiries are pursued, eventually a mass of information will be obtained, that will prove of great value; and they indulge the hope that it will result in a uniform system, in the preparation of cheese, so as to render the dairies of our State, uniformly equal to any in the world.

It has been said by an experienced English dairyman, Mr. Hayward, (vide. Cultivator, 1844, page 165,) "That the *quality* of the cheese does not depend upon the superior richness of the soil, or the fineness of the herbage; for cheese of the first quality is often made from land of inferior description, and from herbage of the coarsest nature. Nor does the quality of the cheese depend on the breed of cows, for cheese of the best quality is made from the milk of

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cows of all the different breeds in the country; it principally depends on the management of the cows, as to their food, &c., of the milk in converting it into cheese, and of the cheese, till it is fit for market."

The committee are aware that very much depends on the management of the dairy, after the milk is placed under the care of the dairy maid, and if their is a failure here, the cheese will not be of superior quality. They cannot subscribe to the other suggestions which are made, that the soil, herbage or breed of cattle have nothing to do with the quality of the cheese. It will be seen from the statements which accompany this report, that a difference was manifest in both instances as to the quality of the cheese on account of the herbage.

Mr. Bronson states that he gives a decided preference to white clover for pasture, after an experience of many years. Mr. and Mrs. Ottley say, "That when the cows were in *clover pasture*, then the cheese were *larger* and *richer*, than when made from any other pasture."

Mr. White, in his prize essay on cheese making in Cheshire, England, before the Royal Agricultural Society of 1845, says: "The *richness of the cheese* depends upon the quality of the milk, or in other words, the proportion of cream which the milk contains." It is believed that this is the experience of every dairyman who has given, as he should, attention to the subject.

It is evident that the quantity of milk which can be obtained from a cow, must depend on the herbage and breed of cows, in a great degree. Mr. White, in the essay referred to, says: "The annual produce of cheese per cow, depends upon the quality of the animal, and of the land, or rather the herbage." It is important then, to ascertain, if there is any portion of the State best adapted to the production of grasses suitable for the secretion of milk, and if there is any breed of cows superior in yielding milk. The efforts of the society cannot be directed at this time to a subject more worthy of their attention. The communications which have been received, show the importance of the inquiries which have been submitted; and it is to be regretted, that the premiums offered, had not been much larger in amount, as some of our most extensive dairymen declined making the experiments, on account of the increased expenditures to which they would have been subjected. The committee would most respectfully suggest, that increased premiums be offered for the ensuing year, and they indulge the hope, that a much larger number of experiments will be made, the results of which will undoubtedly prove of much interest to the society, and to those engaged in this important branch of agriculture.

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From the reports presented by the county societies, and from other sources, the committee are satisfied, that the quantity of cheese obtained from each cow in the State, is very much less than it should be. But little information can be obtained from the last State census, as to the amount from each cow, as the number of cows from which cheese was manufactured is not separately given. The whole number of cows milked in the State, as returned, is 999,400; adopting 333,-163, one-third of that number, as used in the manufacture of cheese, and this is probably less than the actual number, it would give about 110 lbs. as the product of each cow; the whole quantity of cheese manufactured being 36,744,956 lbs.

In the county of Herkimer, where cheese is more extensively manufactured than in any other in the State, and where the cheese is of superior excellence, much of it commanding in the English market as high prices as the best Cheshire cheese, the amount per cow is 226 lbs. In the town of Fairfield, in that county, 350 lbs. per cow; and in some dairies in that county, as high as 680 lbs. The annual average in one dairy, Mr. Alonzo L. Fish's, for three successive years, was 680 lbs. per cow, and in one of these years 714 lbs. was obtained. (Vide Trans. N. Y. S. Ag. Soc., 1844, pp. 227—8, 9.)

The Cheshire dairies in England average 336 lbs. per cow, and from selected cows 560 pounds.

These examples show what has been done by a proper care in the selection of cows, and by attention to their feed and management both winter and summer. Many farmers sustain great loss by not feeding their cows properly during the winter. The committee believe that the yield for the whole State may be increased to 400 lbs. to each cow, and that without extra feed. This would give a large addition to the resources of the farmers and the wealth of the State.

Taking the number of cows by the last census 333,163, and 400 lbs. to each cow, it would give as the result 133,265,200 lbs., instead of 36 millions and upwards as returned by the last census. This at five cents per pound which is certainly a fair estimate, would increase the amount of receipts over and above what was received $5,026,012. This certainly is an object worthy of the attention of every one who is interested in the advancement of the agricultural interest of the State. Not only is the agriculturist interested in this increase, but the commercial interest would be greatly advanced, and the increase of tolls and transportation would add much to the wealth of our State. Success in this branch of agricultural industry would tend much to encourage efforts in other departments, and its beneficial effects would be felt throughout the entire State.

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Acting then as this society does for the general good, and desirous to improve and advance particularly the agricultural interests of the State, here is presented an object worthy of the efforts of the society, and one, too, where success is certain, if well directed, and persevering efforts are put forth. The communications which have been presented to us at this time, are in the opinion of the committee, such as most clearly to show that cheese at the rate of four hundred lbs. per cow can be realized, and that without extra feed. It may perhaps be said, that all dairymen cannot obtain cows from which so much cheese can be made. And why not? It is presumed that there is not a single dairy in this State, of any considerable extent, in which there are not cows at this time from which that amount of cheese can be made. By judicious attention in selecting and keeping the best cows, discarding those which are inferior, a stock would soon be secured that would produce the desired amount. It should, however, be borne in mind, that proper care and attention must be given to the animals. Without this is done, no matter what may be the value of the animals, the dairyman must fail of success. The cows should be provided in winter with comfortable shelter, should be well littered, and with a sufficiency of food to keep them in good condition. A supply of roots and shorts, to be fed occasionally, would be amply repaid by the increased product. Unless farmers can be induced to take suitable care of their animals, they can have no reasonable ground to expect a successful result.

Great credit is due to the enterprising gentlemen, who at so much expense, have introduced improved breeds of cattle into this State. This society owes much of its prosperity and usefulness to these public spirited individuals. They have the satisfaction, too, of seeing on every hand the value of the improvements which have been made to our native stock through their instrumentality. It is hoped, too, that they are realizing in some measure a return for their liberal expenditure. It is believed, that in the selection of animals heretofore made, there has not been as much attention given to their properties, as regards the production of milk, as was desirable. There are herds of animals in England of the best breeds, that are valuable not only, but highly prized for their milking properties. If a proper selection from some of these animals should be made, a cross with our best native milkers would soon produce a valuable stock of dairy animals, doubtless equal to any in the world The superiority of the cows in the London dairies, for milk, is well known to every person conversant with the subject. There is no reason to doubt that these animals generally would prove equally valuable for the dairy. In

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each of the two largest dairies, from seven to nine hundred cows are kept. All breeds are to be found here to some extent, but the short horns are greatly in the majority, and are generally found to be the most abundant milkers.

The committee do not deem it necessary to go into an examination of the different methods of preparing cheese. In every part of the management of the dairy, however, regularity and neatness *are absolutely indispensible.* Nothing whatever will compensate for the want of these. While many of our dairies are in this respect, not only unexceptionable, but present a most attractive appearance, it is a matter of regret that there are those, and not a few in number, which are sadly deficient, and need a speedy application of the brush and pure water.

In England, as well as in this country, the main reliance, as to the quality of the cheese, depends upon the person engaged in its manufacture. Usually the farmer's wife, or some female employed for the purpose, superintends the whole. Upon her skill, care and constant attention, very much depends. The labor is incessant, from a very early hour in the morning, until late at night; and one who has witnessed her at her labors will be satisfied that they are of no ordinary kind. The superiority of the cheese depends much on the skill and tact of the maid, which she may not be able fully to explain to others, though conscious of the ability to perform the work as it should be done. There are certain general requisites which must be observed, and which appear sufficiently in the statements which accompany this report, as well as in others which have been published in the volumes of the Transactions of the society.

The following are the questions which were proposed to dairymen under the resolution of the society :

NEW-YORK STATE AGRICULTURAL SOCIETY.

Premiums on cheese dairies for 1846.

First premium,	$50
Second premium,	30
Third premium,	20

The persons making application for premiums, must submit written answers to the following questions :

1. What is the locality of your farm, its elevation, and latitude ?
2. How much land under cultivation ? How much in pasture and in meadow ?
3. What is the nature of your soil and subsoil ?

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4. What plants or grasses do you use for pastures? What for hay, and how are your meadow lands treated, and how much hay do they yield per acre?

5. How many pounds of milk from each cow? How many from the whole herd?

6. How many cheese to 100 lbs. of milk? The quantity of milk during the season? The quantity of cheese during the season? The quantity of cheese to each cow?

7. At what time do you commence making cheese?

8. Do you rear the calves? Do you keep swine?

9. What feed is used besides grass and hay?

10. A *particular account* of the method of making cheese? The quantity of the cheese, and its price in market, and place where sold?

11. The number of cows milked? The breed of the cows and their ages.

12. What difference, if any, has been observed in the quantity of cheese yielded by the same quantity of milk given by different cows?

13. Has any particular kind of herbage been noticed to have an influence in increasing the proportion of *cheesey matter* in a given quantity of milk?

14. Any other particulars which are important as it regards the management of the dairy, so as to determine the best method of *conducting a dairy?*

It is expected that the questions will be answered with precision, and that all the operations of the dairy will be carefully noted during the entire season. The object of the society is, to ascertain as far as practicable all that relates to the manufacture of cheese, the quantity of milk per cow, the quantity of cheese, and the quantity of cheese per each 100 lbs. of milk; the kinds of plants and grasses best adapted to producing milk for cheese; the best breed of cows, and the location of farms best adapted to the manufacture of cheese.

From Mr. Bronson's statement it appears

That his farm is located in the town of Warsaw, Wyoming county, on a hill west of the valley of Allen's creek, at an elevation of from three to four hundred feet above the creek; and is estimated at from 800 to 1,000 feet above tide water, in latitude about 42° 50′.

He has 110 acres in pasture, 50 acres in meadow, and 10 acres under the plow.

The soil of his meadow is a deep black muck; the subsoil of a clay hard pan.

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The soil of his pasture is mostly of a coarse gravel, with sandy loam; the subsoil the same; underlaying rock is shale.

His meadows have timothy and red clover, with a mixture of red top; are highly manured with barn yard manure, and no other manure is used. Average yield 1½ tons per acre.

His pastures have white clover and timothy, with a mixture of red top; the clover predominating.

His cows yielded an average of 33 lbs. 8 ounces of milk per day. The whole herd, 44 cows, in June, 1,474 lbs. The quantity of cheese from 100 lbs. milk in June was 9 lbs. 4 oz. In September, 12 lbs. 7 oz.

The average number of cows through the season was 40. The whole quantity of milk during the season was 170,666 lbs. Eight tons of cheese were manufactured, including 500 lbs. of butter, which is estimated as equal to half a ton of cheese. This estimate of the butter is probably lower than the actual amount, as a pound of butter usually will equal 2¼ to 2½ of cheese. This result, however, as stated by Mr. Bronson, gives an average of 400 lbs. of cheese to each cow.

From the extreme drought of six weeks, during the season, the quantity of cheese was diminished at least one ton.

Mr. Bronson commences making cheese about the 15th of April, and ends about the first of December.

He does not rear his calves, but keeps swine, and has fattened twenty-five the past season. Uses no feed but grass and hay.

His cheese sold at the dairy this year at 5⅞ cents per lb., the purchaser furnishing the boxes; the cheese to be delivered 15 miles from Mr. B.'s residence, and no allowance made for the greenness of the cheese.

The cheese of the preceding year were sold in May last for 8 cts. per lb., at Rochester.

His cows are nearly all of native breed, between five and ten years of age.

Mr. Bronson has made an experiment which satisfies him that the *quality* of the milk greatly affects the *quantity* of cheese. He selected an equal quantity of his best and poorest milk, and the yield of the poorest was *seventeen per cent. less*, than the best. Heretofore he has doubted on this subject, but this experiment was entirely satisfactory, and removed all his doubts.

A decided preference is given, by Mr. B., to white clover for pasture.

He has been engaged for twenty years in the dairy business. His method of managing his dairy is annexed, and it will be seen that,

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first of all, neatness in all his utensils is most carefully observed. There are some peculiarities in his method of making cheese, which are worthy of notice. Less salt is used than by most dairymen; but he adds eight ounces of sal nitre, finely pulverized, to 60 lbs. Salina salt. This serves to increase the richness, and preserves the flavor of the cheese. Too much salt has a tendency to injure in both respects.

He preserves his cheese, after they are taken from the press, on hemlock shelves, in an upper room, *where the sun strikes the roof.* His reasons for this are: That it keeps up a rapid fermentation, until the dampness of the whey is gone. It preserves the flavor and quality of the cheese. The danger of cracking is increased, but he considers this more than counterbalanced by the quality of his cheese.

To the question, What makes bad cheese? he answers, " *Sour, unclean vessels,* bad rennets, too much salt, or too slightly mixed, slight pressure, and neglect after pressing, are among the principal causes which produce bad cheese.

He presses his cheese powerfully, from two to four days. They are made 7½ inches thick, in a hoop 16 inches in diameter, and have a bandage round the edge.

The statement of Mr. Bronson which accompanies our report, is full in every particular, and is verified by his affidavit. From his experience of twenty years, he is satisfied that his method, taken as a whole for all our markets, is mainly correct, and that when the cheese is carefully prepared, it will produce from year to year an article of uniform good quality. This is a result very desirable to be attained, and which must add greatly to the value of any dairy.

The result of this dairy shows that 400 lbs of cheese per cow has been obtained, without any other feed than grass and hay, and had it not been for the unusual drought of the season, 450 lbs. would have been realized. Had Mr. Bronson fed the whey to his cows as practiced by Mr. Fish and Mr. Hall, (see Transactions 1844, 227 '8 '9,) he undoubtedly would have added 100 lbs. more cheese from each cow during the season. Every one, we think, on examining this statement so carefully prepared, must be satisfied that there is little difficulty in obtaining at least 400 lbs. of cheese from each cow, from a dairy of moderate size.

From Mr. and Mrs. Ottley's statement it appears:

That they manufactured from the milk of eight cows, in the month of June and July, 1248 lbs. of cheese from 10,400 lbs. of milk; 100 lbs. of milk averaging 9 lbs. of cheese. The average pounds of milk from each cow daily, is a little over 21 lbs. The highest yield being 28 lbs., and the lowest 15.

The cows are fed hay and grass only, and the calves are reared and swine are kept from the dairy. His farm lies in the town of Phelps,

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Ontario county, elevation above tide water estimated 450 feet. It is generally level, with some small ridges. He has two hundred acres under cultivation. Fifty acres in pasture and fifty in meadow, the residue under the plow.

The soil is mostly gravel; one third sandy loam, subsoil gravel, and a small part clay.

The meadows are timothy and clover. The flat land in meadow is red top, which Mr. Ottley states produces the best hay for cows. He plows up his meadows every third year. The pasture land is mostly clover, which is plowed once in two years, if the yield is not equal to two tons per acre.

Mrs. Ottley gives the method of manufacture of the cheese, which will be found in the report annexed. It will be seen on examination, that *neatness* in every thing appertaining to the cheese is most carefully observed. The quality of the cheese is of the first character, as appears from the price which it commands in the market at home, from $8 to $10 per hundred. The second premium was awarded to cheese from this dairy, at the State Fair at Utica, in 1845, when a more severe competition existed than has ever been witnessed in this State. There were thirty-six competitors, and over one hundred cheese were exhibited, not one of which, say the committee, "that might not be a desirable present to a friend."

The breeds of cows were four, a cross of Devons and Holderness, and four, a cross of Durhams and natives. The Devons and Holderness are considered the best for dairy purposes, yielding the largest quantity of milk, and continuing to do so through the season. The cows range from 5 to 10 years of age.

No difference has been observed in the quantity of cheese from the same quantity of milk, *except* when the cows were kept in clover pasture, the *cheese were larger* and *richer* than when made from any other pasture. In hot weather, the operations have to be performed more speedily than in cool weather.

Mr. Ottley has been engaged in the manufacture of cheese for 19 years, and he prefers the method of making which he practices, to any other. From the character of his cheese, it would seem to the committee quite safe at least for him to continue it, having hitherto been so successful.

Had the manufacture of cheese been continued for the whole season, which will average over six months, the amount from each cow would undoubtedly have been four hundred pounds and upwards. June and July are probably two as favorable months as could be selected together; the feed is then quite as good as at any period of the season, and the weather generally favorable. The yield must be

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considered as very good indeed, from cows kept on hay and grass alone, and certainly much larger than is usually obtained from dairies in this State. It is apparent from this statement, that without any extra feed, from good cows, 400 lbs. and upwards per cow may be realized per annum.

Mr. and Mrs. Ottley have answered all the questions which were submitted, and a certificate as to the facts, accompanies the statement, signed by Thomas M. Ottley and Miss Lucy L. Homes, who assisted in weighing the milk and cheese.

The committee would recommend that the first premium of $50, be awarded to *Newbury Bronson*, of Warsaw, Wyoming county, he having pursued the manufacture of cheese during the whole season, and carefully complied with the regulations of the society.

To Mr. and Mrs. *Wm. Ottley*, of Phelps, Ontario county, the second premium, of $30, they having, during the time they manufactured cheese, complied with the requirements of the society.

All which is respectfully submitted,

B. P. JOHNSON,
T. C. PETERS,
Committee.

January 20th, 1847.

STATEMENT OF MR. BRONSON.

To the Committee of the New-York State Agricultural Society, on Cheese and Dairies.

Gents—In answer to the several questions submitted in your printed circular, dated Feb. 14, 1846, relating to Cheese dairies, I, Newbury Bronson, of Warsaw, in the county of Wyoming, and State of New York, do state as follows:

Question 1. What is the locality of your farm, its elevation and latitude?

Answer. My farm is located in the town of Warsaw, about 1½ miles south west from the village of Warsaw, on the hill west of the valley of Allen's creek, from 300 to 400 feet above the creek; gradually descends towards the east. The hill rises west of my farm, in about four miles, some 500 to 600 feet above the elevation of my farm.

My farm is about 30 minutes (of a degree) south of Rochester, and about 15 minutes west of that place.

Ques. 2. How much land under cultivation; how much in pasture and in meadow?

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Ans. About 20 acres under cultivation; 110 acres in pasture, and 50 acres in meadow.

Ques. 3d. What is the nature of your soil and subsoil?

Ans. The soil of my present meadows is a deep *black muck*, with a clay hard pan subsoil. The soil of my present pastures is mostly a coarse gravel, with a *sandy loam.* Subsoil the same. The underlaying rock is Shale.

Ques. 4. What plants or grasses do you use for pastures; what for hay. How are your meadows treated; how much hay do they yield per acre?

Ans. White clover and timothy, with a mixture of red top, but the clover predominating for *pasture*, My meadows are timothy and red clover, with a small mixture of red top, and are highly manured from the barn, and no other dressing used. They yield 1½ tons per acre.

Ques. 5. How many pounds of milk from each cow? How many from the whole herd?

Ans. I have taken some pains, since receiving your circular, in April last, to ascertain, and think the following correct:

My cows in June last, consisting of 44 in number, gave, on an average, in that month, each, 16 quarts per day, which weighed 8 lbs. 6 ounces per gallon, making the daily yield of each cow in June 33 lbs. 8 ounces. The whole herd of course gave 176 gallons each day, weighing 1474 lbs.

During the latter part of the season I had only 37 cows.

Ques. 6. How many pounds of cheese to 100 lbs. of milk? The quantity of milk during the season? The quantity of cheese during the season; the quantity of cheese to each cow?

Ans. The quantity of cheese obtained from 100 lbs. of milk, will vary at different periods in the season. I have taken pains to ascertain the difference in this respect, between the months of June and September. In June, 100 lbs. of milk made 9 lbs. 4 ounces of green cheese. In September, 100 lbs, milk made 12 lbs. 7 ounces green cheese.

Again, there is a difference in the quality of the milk, which will greatly effect the *amount* of cheese obtained from 100 lbs. of milk.

I have selected my *best milk* and made curd from it separately. I have done the same with my *poorest milk*, taking an equal quantity of each. The poorest milk yields 17 per cent less curd than the best, as I get it from my cows. I have heretofore had doubt on this subject, but my experiments have removed that doubt entirely.

The average number of cows kept through *the season* is 40. The whole amount of milk obtained during the whole season, computing

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that portion of the season now unexpired, as an ordinary season, is 170,666 pounds of milk, from which is produced eight tons of cheese *including the butter*, that is, I have made 500 pounds of butter, and that, according to custom, which I think correct, I call equal to half a ton of cheese.

The average quantity of cheese to each cow, including the butter, is 400 lbs.

Remark. The extreme drought for six weeks this season, cut off the quantity of cheese I have made this year, at least one ton.

Ques. 7. At what time do you commence making cheese?

Ans. I usually begin the 15th of April, and end the 1st of December.

Ques. 8. Do you rear calves? Do you keep swine?

Ans. I do not rear calves. I keep swine. This year kept 25.

Ques. 9. What feed is used besides grass and hay?

Ans. None.

Ques. 10. A particular account of the method of making cheese; the quantity of cheese, and its price in the market, and place where sold?

Ans. For a particular account of my method of making cheese, see a paper hereto annexed, on that subject.

For the quantity made see a part of my answer to 6th question.

I sold my cheese at my dairy this year, to H. Burrell & Co., of Herkimer county, on the 18th August, at 5 and 7-8 cents per pound. The purchaser furnishing boxes, and taking, on the 1st November all the cheese *then* (on 1st Nov.) twenty-five days old—I delivering it at Cuyler, 15 miles distant—and no allowance made for its greenness; delivering five tons 1st Oct. and the balance 1st Nov.

My last year's dairy, I sold in Rochester, in May last, after the market had sensibly declined, at 8 cents per pound.

Ques. 11. The number of cows milked; the breed of the cows and their ages?

Ans. The average number of cows milked this season, is 40. Nearly all of the native breed.

Their ages are nearly all between 5 and 10 years—a few older, and one or two younger.

Ques 12. What difference if any has been observed in the quantity of cheese yielded from the same quantity of milk given by different cows?

Ans. My answer to this question appears in my answer given to the 6th question, to which I beg leave to refer the committee.

Ques. 13. Has any particular kind of herbage been noticed to

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have an influence in increasing the proportion of cheesey matter in a given quantity of milk?

Ans. I have made no precise experiments on which I would rely in answering this question, but my observation for years has led me to give a decided preference to *white clover* for a pasture.

My answer to question 14 will be found interspersed in some of my previous answers, and in the annexed paper on my method of cheese making.

Respectfully submitted.

NEWBURY BRONSON.

Warsaw, Nov. 11, 1846.

A particular account of the method of making cheese practiced by Newbury Bronson of Warsaw, Wyoming county, New-York, and referred to in answer to question 10, in his communication hereto annexed.

1. Every vessel should be kept perfectly sweet and clean.

2. *Preparing the Rennet.* Keep the calf from all *dirt* 24 hours before killing; save all the contents of the bag carefully; when *cool* put in plenty of salt; do it up neatly, and hang it in a cool, dry place two or three months; then pack away in dry salt for use.

3. *Quantity of Rennet.* Use a half pint of rennet to one barrel of milk; in warm weather use more to *expedite* coagulation, which is important to have take place in 15 or 20 minutes to avoid souring. If very warm add a pail of cold water to the milk before adding the rennet. It is important to avoid the least souring.

4. *Management of curd before pressing.* When the curd is well drained off, lay it by from 12 to 20 hours, when it may drip; then cut in pieces as fine as *chestnuts;* then heat it in *warm* weather to the temperature of new milk, in *cold* a little higher. I am governed by the weather and the appearance of the curd, in regulating the temperature for pressing.

5. *Salt.* When warmed as above, add one pound of salt to forty pounds of curd, (weighed before chopping it up.) The salt contains a portion of sal nitre pulverized finely, equal to eight ounces of sal nitre to sixty pounds Salina salt.

6. *Size.* Eighty pounds of curd prepared as above, makes a cheese weighing, when pressed, 58 to 60 pounds. I make them 7½ inches thick in a hoop 16 inches in diameter.

7. *Pressing.* I press powerfully from 2 to 4 days, in a powerful double lever press.

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8. *Treatment of Cheese after pressing.* I keep them on hemlock shelves in an upper room, finished under a roof on which the sun strikes, where considerable heat is got. My reasons for this I deem important. The effect is to keep up a rapid fermentation from the time the cheese leaves the press till the dampness of the whey is gone. This preserves the flavor and quality of the cheese. It is true the trouble from *cracking* will be increased by this course, but a compensation will be had in the *quality* of the cheese.

9. *Sacking.* I have tried it without sacks, with *whole* sacks, and with a *band* around the edge. I prefer the *last* mode.

10. *Oiling.* I use on my cheese an oil made from the cream which rises on the whey.

11. *Remarks.* I use less salt than most daries. The sal nitre is in part a substitute; and it serves to increase the richness and preserve the flavor, which are injured by the use of too much *salt.*

I am frequently asked, what makes bad cheese?

I answer; sour or unclean vessels, bad rennet, sour milk, too much salt, or the salt slightly mixed, slight pressing, and neglect after pressing, are among the principal causes which produce bad cheese.

After twenty years' experience in cheese making in this State and in New-England, I am convinced that for all our markets, my method, taken as a whole, is very nearly correct; and that when it is uniformly and carefully pursued, it will produce cheese of uniform good quality, from year to year.

I would add, that I failed to present a specimen of my cheese at the State Fair at Auburn, on account of the cheese I sent, being *crushed* in the railroad depot at Rochester.

I thank the committee for sending me a copy of their circular, to which this is a reply. The intelligent interest it manifests in behalf of cheese dairies, must be gratifying to all engaged in the subject to which it relates. My replies I have aimed to make as brief as possible, yet they are necessarily of some length. Hoping and trusting that your action will be highly beneficial to all engaged in cheese making, and to the State at large, I remain,

Very respectfully,

Yours, &c.,

NEWBURY BRONSON.

Warsaw, Nov. 11, 1846.

STATE OF NEW-YORK, } ss:
Wyoming County, }

Newbury Bronson, of Warsaw, in said county, being duly sworn, deposes and says, that the foregoing written statement, made and

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signed by him, consisting of eight pages, is a true and accurate statement of facts which he therein makes, so far as they are stated, on his knowledge, experiments or observation; and that so far as the same are made on estimates, or on his own opinion, he verily believes the same to be true. And further says not.

NEWBURY BRONSON.

Sworn before me, this 12th, Nov. 1846,

J. R. DOOLITTLE,
Sup. Court Com. at Warsaw.

STATEMENT OF MR. AND MRS. OTTLEY.

Phelps, December 17, 1846.

B. P. Johnson, Esq.—Dear sir: I submit the following answers to the questions prepared by the New-York State Agricultural Society on cheese dairies, for 1846.

1. The locality of my farm is in the town of Phelps, in the county of Ontario. My farm is flat with small ridges.

2. I have 200 acres of land under cultivation, 50 acres are in meadow, and 50 acres in pasture, and the remainder of my farm is in plowing. The soil of my farm is mostly gravelly, say one-third sandy loam, subsoil, part gravel, and small part clay. My meadow is timothy and clover. Flat lands is red top meadow, which I believe to be preferable to any other hay for cows. I plow up all my meadow ground every third year. My pasture is mostly clover, which I plow up once in two years, when they fail to yield equal to two tons to the acre.

The number of pounds of milk from each cow:

No. 1.	24½
2.	21
3.	26
4.	28
5.	19
6.	17
7.	22
8.	15
	172½

One hundred and seventy-two and a half pounds of milk from the whole herd, 12 pounds of cheese from 100 pounds of milk, 10,400

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pounds of milk during the season, 1248 pounds of cheese during the season. I commenced making cheese the first Monday in June, and made until the last day of July. I rear the calves and keep swine. I feed my cows nothing but grass and hay. In making cheese, the first and most essential particular I practice, is washing and scalding every vessel, cloth or strainer that I use, every day. I strain the milk directly from the cows in a wooden tub, put my rennet in while warm, let it stand until ten o'clock evening. Then break it fine with a cheese dish, reaching the bottom. Whey it off in the morning into a strainer. Strain my morning's milk in the same tub, put the rennet in as before, and let it stand until it thoroughly comes. Then check it with a knife, reaching the bottom, when the curd settles, dip off the whey, so continue until I can dip it into the strainer spread over the cheese basket. Then cut it gently with a knife, and hang it up to drip. So continue until the curd is thoroughly dry, then cut with a curd cutter, into a strainer spread over a vessel. Then scald, having the water as hot as I can bear it to the hands, stirring it constantly with the hands three minutes. Turn on cold water before removing it from the scalding, sufficient to cool it for salting, which I do directly after scalding. Put it in the hoop, let it stand twenty minutes before I put on the press. The weight used at first is quite small, and increased as the cheese becomes more solid, and turn it two hours after putting on the press. Then turn night and morning. Press thirty-six hours, and remove it to the cheese room; turn and rub with butter every day.

My rennet I prepare in the following manner: Soak four rennets over night in fresh water, make a brine, scald and skim, and when cool put it on the rennets. This I prepare two weeks before using; two gills of this rennet is sufficient to make a cheese weighing forty pounds. One quart of salt to forty weight of cheese.

My cheese is of the first quality, commands the highest price in market, varying from $8 to $10 per hundred, according to the age. My market is Geneva, Vienna and Canandaigua.

The number of cows that I have milked during the season is eight. A part of them, say four, are a cross of Devonshire and Holderness, and the other four are one-half Durham and one-half native breeds. I believe the Devonshire and Holderness are the best for dairy purposes, they giving the largest quantity of milk, and continuing to do so through the season. The age of my cows range from 5 to 10 years old. I have never found any difference in the quantity of cheese from the same quantity of milk, except when the cows were in clover pasture, then the cheese are larger and richer than from any other pasture.

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N. B. No. 14, as to different modes of making cheese; the only difference I have observed, is that in hot weather it requires to be quicker made, in the different operations from the other statement below.

P. S. We that have subscribed our names to this, do certify the statements made respecting the quantity of milk and cheese is correct in every particular; we helped weigh the milk and cheese.

THOMAS M. OTTLEY,
LUCY L. HOMES.

BUTTER DAIRIES AND BUTTER.

Mr. Denniston, from the committee on butter dairies, begs leave to report:

The only application for premiums before the committee, is made by Mr. B. H. Hall, of New-Lebanon.

The statement made by Mr. Hall, appears to conform in all respects with the regulations prescribed by the executive committee; and as this statement is a very interesting one, the committee embody it in their report, as follows:

The undersigned, having observed by the proceedings of the executive committee of the New-York State Agricultural Society, that they offer premiums for the best butter dairies, is induced (having been engaged in butter making) to offer the following statement for the consideration of the committee on butter dairies:

My farm is located in the valley of New-Lebanon, Columbia Co., in about 42½°; contains about 180 acres of improved land, which is composed of a variety of soils, viz: an alluvial clay loam on the flats, (about one-third of the whole,) which are generally kept in meadow. The other portions are gravel loam and slate and gravel, with the exception of some 20 acres, which are wet clay and gravel pastures with a hard subsoil, bearing the variety of grasses usual on wet pastures. The other pastures used, are plowed and cropped in their rotation, say two years in every five, and are stocked with clover and herds grass. Hay used, clover and herds, with a slight mixture of red top on the low grounds.

My dairy is composed of 16 cows; 3 three years old heifers, and 2 two years old. Cows of native breed, one full blood short horned heifer, the others half bloods; the full blood heifer suckled her own calf and another, a half blood, through the season. One of my best

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cows lost her udder before the 1st of August, by the kine pox, which disease very much injured the whole dairy for some five weeks. I also parted with one cow the last of September.

Estimating the four heifers to be equal to three cows, I had no more than 19 cows through the whole season. Add to this the hottest weather ever experienced for the same length of time, and a severe drought for some five weeks, and I believe I have enumerated all the disadvantages under which I labored.

The feed of the cows was hay, grass and dry corn stalks, with the exception of 30 two-horse wagon loads of pumpkins. The product was as follows:

3,189 lbs. of butter, sold in the Boston market, at an average price of 19¾ cents per lb., which price perhaps is a fair criterion by which to judge of its quality,	$621 84
20 calves sold and two raised,	91 50
Cream and milk used in a family of 10 persons, at 15 cts. per day,	54 75
Skimmed milk and buttermilk fed to the hogs 215 days, at $1.30 per day,	279 50
	$1,047 59

The average quantity of milk from each cow per day, for 215 day, 26 lbs. Aggregate quantity for each cow, 5,590 lbs. Quantity of butter to the 100 lbs. of milk, 3 lbs. 3 oz. Gross quantity of milk and butter, 109,395 lbs.

Method of making.—Room used, kept as near a temperature of 60 as may be. Milk strained into a large can placed in the milking yard, which adjoins the milk room, inside of which it is drawn by means of a conductor and faucet into the pans, usually about eight quarts in each pan; it is drawn over ice placed in the can whenever the temperature requires, consequently the cream rises in much less time than when cooled in the ordinary way. It ought to stand 36 hours before being skimmed, but this time must be varied occasionally, as the weather changes. It should be skimmed when the milk is slightly changed and before it is coagulated. The cream is put into stone jars and placed in a refrigerator in contact with ice, until it is churned, which is done every second or third day. Churn used, a circular one with revolving arms or paddles, framed into a shaft of *wood;* cream should never come in contact with iron. The motive power is a platform wheel turned by a small horse. The butter is

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salted with ground rock salt, passed through a fine sieve, that there may be no lumps or particles that will not dissolve. (How often have you had your teeth set on edge by coming in contact with a lump of salt, in otherwise good butter.) It is salted to suit the taste and the market, (which requires it very mild unless it is designed for keeping a longer time than usual;) it is then placed in the refrigerator and kept cool until it is taken out, worked on an inclined table with a break, packed in new tubs containing 25 lbs., and sent to market, which is done every week, always using ice in every part of the process, the weather requiring it.

The committee will be better able to judge of the value of the milk and buttermilk, for hog feed, when I state that I have sold pigs, pork and lard, to the amount of $1,063.09, at an expense of $667.00, for purchase money and feed, other than milk, and that my hogs have made, of the feed and materials given them to *work*, near 300 half-cord loads of manure; *the value of which every farmer ought to know.*

I here wish to remark, that the editor of the Farmer's Library, in relating a conversation held with me, made an error in the number of pigs I sent to market, by the addition of one 0 too much.

All of which is respectfully submitted.

B. H. HALL.

New-Lebanon, Jan. 8, 1847.

There being no competitor with Mr. Hall, for premiums for best butter dairies, the committee have no alternative but to award to Mr. B. H. Hall, of New-Lebanon, Columbia county, the first premium of twenty-five dollars.

The committee would ask indulgence for a few moments to remark, that butter dairies constitute the most valuable agricultural interest in this State, and cannot receive too much of the fostering care of this society.

In looking at the returns of the last State census, the article of wheat appears, at the first view, to be the most valuable crop produced in the State.

The number of bushels raised in one year, is given at 13,391,770, which, at ninety cents per bushel, which is believed to be a fair average price in all parts of the State for several years together, yields $12,052,593.

The quantity of butter made during the same year was 79,501,733 pounds, which, at twelve and a half cents per pound, which is believed to be a similar fair average price, yields $9,937,716.

To this may fairly be added, for increase of the butter dairy, as follows:

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There were milked the same year 999,490 cows, of which number three-fifths at least, it is estimated, were appropriated to butter dairies, and the remainder to cheese dairies. Three-fifths of the whole number would be 599,685, which would yield say 500,000 calves, after throwing away the 99,685 for casualties, and in conformity to a custom which prevails in some places, of killing them when one or two days old—enough the committee think to warrant them in saying that the increase of the 500,000 cows, in the shape of veal and calves raised, would be equal to two dollars per head, which would give $1,000,000.

There were the same year 1,584,354 hogs, worth doubtless upon an average, three dollars per head, one third of which number may be considered as raised annually by the milk from the cows used for butter dairies. One-third of the whole number is 528,114, which at three dollars each is $1,584,342. The whole may be summed up as follows:

79,501,733 lbs, butter 12½ cents per lb.,	$9,937,716
Increase of 599,685 cows, after deducting the 99,685 for casualties, &c. as above, say 500,000 at two dollars each,	1,000,000
528,114 hogs at three dollars each,	1,584,342
Total,	$12,522,058
The crop of wheat as above, deducted	12,052,593
Leaving a balance in favor of the butter crop, of	$469,465

If the committee have estimated the increase from the cows too high, or if they have put down too many hogs as the products of the butter dairy, either or both items may be much diminished, and yet leave a balance in favor of the butter crop.

Another advantage of the butter dairy over the wheat crop consists in the cost of the labor of production and transportation to market. The labor of females and boys is used mainly in the milking of cows and making the butter, which is cheaper than the labor required in plowing, sowing, and threshing the wheat and carrying it to market.

The cost of transportation to market is greatly in favor of the butter dairy.

Forty firkins of butter and three tons of pork would be considered a good crop from a very considerable farm, and yet this quantity would not make more than five or six two horse wagon loads, while six hundred bushels of wheat, the product of a moderate farm, would make twenty wagon loads, and the cost of railroad or canal transportation would show a similar inequality.

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Moreover the process of grazing in making the dairy crops, continually fertilizes the soil, and in this respect it exhibits a decided advantage over the wheat crop, as the process of plowing gradually wears upon and reduces its fertility.

The butter dairy is also very uniform and reliable, while the wheat crop is subject to many contingencies.

The above calculations are not claimed to be entirely accurate, but they are believed to be sufficiently so to show that the butter dairy is the most valuable farming interest in the State, and worthy the most favorable regard of every friend of agriculture.

All which is submitted.

Albany, January 21, 1847.

REPORT OF COMMITTEE ON OATS, BARLEY, CLOVER, TIMOTHY SEED, SPRING-WHEAT AND FLAX.

The committee report: That there are but three applicants for premiums on barley, none of which appear to conform to the requirements of the Society, so as to embrace the whole crop raised, and if the crop raised is embraced it is very small.

The following premiums, subject to the decision of the executive committee, are awarded:

Barley.

1. To Calvin Pomeroy, East Bloomfield, 57 bushels per acre, on two acres $\frac{58}{100}$ ---------- $10

2. Samuel H. Church, Vernon Centre, Oneida county, 44¼ bushels on 2¼ acres, ---------- $5

3. E. C. Bliss, Westfield, Chautauque county, 38$\frac{1}{2}$-$\frac{2}{3}$ bushels, Vol. Trans.

Spring-Wheat.

One application only.

Robert Eells, Westmoreland, Oneida county, 20$\frac{4}{60}$ bush per acre, premium, ---------- $10

Oats.

Two competitors.

1. N. S. Wright, Vernon Centre, Oneida county, 830 bushels on 15 acres, 55⅓ bushels per acre. ---------- $10

2. Robert Eells, Westmoreland, Oneida county, on one acre 37 rods, 77 bushels per acre, ---------- $5

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Clover Seed.

Henry Brewer, Enfield, Tompkins county, on two acres 10¼ bushels, ---------- $10

Timothy Seed.

E. C. Bliss, Westfield, Chautauque county, 8 bushels 13 quarts per acre, ---------- $10

Flax.

E. C. Bliss, Westfield, Chautauque county, 225 lbs. clean Flax, and 15 bushels seed on half an acre, ---------- $5

The committee highly approve of the change which has been made in the premium list, and only regret, that there were not more applications, although it was to have been expected that one or two seasons would elapse before farmers would feel sufficient emulation, to accurately survey and measure an entire crop for so small a premium as is awarded; yet your committee confidently hope and believe, this will ultimately be done, and much valuable information thereby elicited.

All which is respectfully submitted.

J. F. RATHBUN,
JAMES M. ELLIS,
Committee.

Albany, January 21, 1847.

CALVIN POMEROY'S STATEMENT OF BARLEY.

Ontario county, ss:

Elisha M. Bradley being duly sworn deposeth and saith, that he is a practical surveyor, and that he surveyed a piece of ground upon which Calvin Pomeroy says he raised a crop of barley the past summer, and the amount of land thus surveyed was 2 acres and 58 hundredths, and that in surveying said piece of land he used a surveyor's compass and chain.

ELISHA M. BRADLEY.

Subscribed and sworn to this 23d day of Dec., 1846, before me,

JOSIAH PORTER,
Justice of the Peace in and for said county.

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Ontario county, ss:

Calvin Pomeroy being duly sworn deposeth and saith, that he raised a crop of barley upon the land surveyed by Elisha M. Bradley, as above sworn to, and that the amount of said crop was one hundred and forty-seven bushels and one peck, and that the whole of said amount of barley grew upon the land included in said survey; and that he was assisted in measuring said barley by Amos Parsons and Franklin Cogswell; and that the accompanying statement of manner of cultivating said crop and expenses of cultivating said crop, are true to the best of his knowledge and belief.

CALVIN POMEROY.

Subscribed and sworn to this 23d day of Dec., 1846, before me,

JOSIAH PORTER,

Justice of the Peace in and for said county.

Ontario county, ss:

Amos Parsons being duly sworn deposeth and saith, that he assisted Calvin Pomeroy in measuring his crop of barley, it being measured in a sealed half bushel, and that the amount of barley thus measured was one hundred and forty-seven and one-fourth bushels.

AMOS PARSONS.

Subscribed and sworn to this 23d day of Dec., 1846, before me,

JOSIAH PORTER,

Justice of the Peace in and for said county.

Ontario county, ss:

Franklin Cogswell being duly sworn deposeth and saith, that he assisted Calvin Pomeroy in cultivating and measuring his crop of barley grown the past summer, and the amount of said crop of barley was one hundred and forty-seven and one fourth bushels, and this was the whole amount of barley raised by said Pomeroy during the summer of 1846.

B. F. COGSWELL.

Subscribed and sworn to this 24th day of Dec., 1846, before me,

JOSIAH PORTER,

Justice of the Peace in and for said county.

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Ontario county, ss:

Calvin Pomeroy being duly sworn deposeth and saith, That the sample of barley herewith sent is a fair specimen of the whole crop.

CALVIN POMEROY.

Subscribed and sworn to this 24th day of Dec., 1846, before me,

JOSIAH PORTER,
Justice of the Peace in and for said county.

CALVIN POMEROY'S STATEMENT IN REGARD TO BARLEY CROP.

Soil clayey, gravelly loam. The field had been in meadow some years. Last year it was plowed and planted to potatoes with a slight dressing of manure; the crop ordinary. Last spring spread on the field forty loads of manure; plowed it once, harrowed, and then sowed it with the common 6 rowed barley without preparation; harrowed it thoroughly both ways. Sowed about the 15th of April. The amount of seed used was three bushels. Crop ripe 20th of July; harvested and threshed in December.

Expenses of Crop.

Expense of plowing 1½ days, at 16 shillings,	$3 00
One day harrowing,	2 00
Sowing 3s., cutting do., 3 days, 8 shillings,	3 38
Cutting into barn,	3 50
Threshing and cleaning,	8 00

SAMUEL H. CHURCH'S STATEMENT OF BARLEY.

Norton G. Merrell, of the town of Vernon, being duly sworn, deposeth and says, that in the summer of 1846, he surveyed a certain field of barley for Samuel H. Church, of said town; and that the quantity of land contained therein, was $2\frac{48}{100}$ acres, and that said survey embraced all the barley in said field.

And further this deponent says not.

NORTON G. MERRELL,
Surveyor.

Sworn and subscribed to, before me, this 29th day of Dec., 1846.

ERASTUS W. CLARK,
Justice of the Peace.

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Statement of a crop of barley, raised by Samuel H. Church, of Vernon, Oneida county, the past season, and entered for premium of the New-York State Agricultural Society, at their annual meeting at Albany, 1847.

Two acres 48-100. Soil, clay and gravel upon red rock formation. Previous crops, winter wheat with twenty-five loads barn yard manure to the acre, applied in August, and harrowed in with the wheat.

No manure applied with the barley crops; plowed twice, fall and spring six inches deep; seed harrowed in three bushels per acre. sowed April 27th, and harvested with cradle, and bound in bundles, and shocked ten days, then carted.

Threshed by hand, cleaned with Soper's fan mill. Yield from 2 48-100 acres 112 3-48 bushels. Expense of cultivation $18.11.

112 3-48 bushels barley at 4s.,	$56 00
Straw,	5 00
	$61 00
Deduct expense,	18 11
Profit,	$42 89

Oneida County, ss:

Samuel H. Church, being duly sworn, deposes and says, that the statement of cultivation, and the number of bushels produced, as above stated, is true, according to the best of this deponent's knowledge and belief. SAMUEL H. CHURCH.

Sworn and subscribed before me, this 6th day of January, 1847.

LEVI T. MARSHALL,
Justice of the Peace.

Oneida County, ss.

U. W. Stephens and Hiram H. Church, being duly sworn, depose and say, that they assisted in threshing, cleaning and measuring the crop of barley as within stated, and that the number of bushels produced from the piece of ground within stated, was one hundred, twelve bushels and three pounds, by actual weight and measurement.

URIAH W. STEPHENS,
HIRAM H. CHURCH.

Sworn and subscribed before me, this 6th day January, 1847.

LEVI S. MARSHALL,
Justice of the Peace

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SPRING WHEAT.

Statement of the method of cultivation, &c., of a crop of spring wheat, raised by Robert Eells, of Westmoreland, Oneida co., N. Y. and entered for the premium, offered by the New-York State Agricultural Society.

Soil is composed of red loam and gravel with some sand. Previous crop corn manured with 20 loads of rotten barn yard manure in the hills, on the two pieces which contains two acres and sixty-four rods of land. About the first of April last, said pieces were plowed 8 inches deep. On the 16th of April, spread a compost of 40 bushels lime, and 40 bushels of leached ashes on the two pieces, and harrowed it.

On the 17th of April, sowed five bushels of Siberian spring wheat on the two pieces, prepared by washing the wheat in strong brine, and mixing as much slaked lime on it, as would stick to it, the day previous; harrowed both ways the same day that it was sowed. Harvested the 4th day of August. Threshed about the middle of December, weighing 2,982 pounds on the piece, making 49 bushels and 42 pounds of wheat.

Number of bushels wheat, 49 bush. 42 lbs. at 10s.,-------	$62 10
Value of straw,----------	4 00
Average per acre, 20 bushels 42 pounds,----------	$66 10
Expense of cultivation and use of land,----------	27 75
Profit,----------	$38 35

ROBERT EELLS.

Westmoreland, Dec. 24, 1846.

I hereby certify, that on the 4th day of August, 1846, I surveyed 2 pieces of land in the same field, on which a crop of spring wheat grew this year, for Robert Eells, of Westmoreland, Oneida co., N. Y., which contains two acres and sixty-four rods of land. The survey was made with chain and compass and is correct.

MARCUS CATLIN, *Surveyor.*

Sworn and subscribed before me, this 22d day of Dec., 1846.

R. C. NICHOLS, *Justice of the Peace.*

We do hereby certify that we assisted in harvesting and measuring the within mentioned crop of spring wheat. It grew on the pieces of land mentioned in the above certificate of the surveyor. The product

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as mentioned within is correct, and the sample presented is of a fair average quality with the whole crop harvested and measured.

ROBERT EELLS,
SIMEON HATCH,
GEORGE K. EELLS.

Sworn to and subscribed before me, this 24th day of Dec., 1846,

MALACHI ELLIS, *Justice of the Peace.*

OATS.

STATEMENT OF N. S. WRIGHT, ON OAT CROP.

The condition of soil at the commencement of cultivation was good.

The previous crop, winter wheat after summer fallow, without manure. No manure the present season; plowed once seven inches deep; harrowed well before and after sowing. Sowed forty-five bushels of black and white oats mixed; sowed between the 12th and 15th of April broadcast; harvested with cradle; threshed and cleaned with machine.

Expenses of cultivation.

Plowing once,		$15 25
Harrowing twice,		15 25
Seed, 45 bushels, at 25 cents per bushel,		11 25
Harvesting,		15 25
Threshing and cleaning,		24 90
		$81 90

Value of Crop.

The amount of crop by actual measurement was eight hundred and thirty bushels. Sold the same for 28 cents per bushel	$242 40	
Straw,	30 00	
		$272 40
		$81 90
Profit,		$190 50

N. S. Wright being duly sworn, deposes and says, that the piece of land mentioned in the certificate hereunto attached, embraces all the oats raised on his farm, and that the quantity specified in the above statement is correct according to his best knowledge and belief, and

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that the sample accompanying this statement is taken from the oats raised on this piece of land, and is a fair sample of the whole crop.

N. S. WRIGHT.

Sworn to and subscribed before me, this 27th day of Dec., 1846.

ERASTUS W. CLARK,
Justice of the Peace.

Norton G. Merrill, of the town of Vernon, being duly sworn, deposeth and says, that in the summer of 1846, he surveyed a certain field of oats for Nathaniel S. Wright, of said town, and that the piece embraced all the oats in said field, and that the quantity of land contained therein was fifteen $\frac{25}{100}$ acres.

And further this deponent says not.

NORTON G. MERRILL, *Surveyor.*

Sworn and subscribed before me, this 29th day of Dec., 1846.

ERASTUS W. CLARK,
Justice of the Peace.

ONEIDA COUNTY, *ss:*

John Raymond being duly sworn, deposes and says: that he assisted in measuring the land mentioned in the certificate hereunto attached, also in measuring the grain raised on said land, and that the amount mentioned in the foregoing statement is correct.

JOHN RAYMOND.

Sworn and subscribed before me, this 27th day of Dec. 1846.

ERASTUS W. CLARK,
Justice of the Peace.

ONEIDA COUNTY, *ss:*

George T. Hall, being duly sworn, deposes and says: that he assisted in measuring the land mentioned in the certificate hereunto attached; also in measuring the grain raised on said land and that the quantity mentioned in the foregoing statement is correct.

GEORGE T. HALL.

Sworn and subscribed before me, this 30th day of December, 1846,

LEVI S. MARSHALL,
Justice of the Peace.

CROP OF ROBERT EELLS.

Statement of the method of cultivation of a crop of oats, raised by Robert Eells, of Westmoreland, Oneida county, N. Y., and en-

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tered for the premium offered by the New-York State Agricultural Society.

The soil is a dark loam and gravel. The previous crop, spring wheat and no manure used. Last spring spread ten loads of rotten barn yard manure on the piece, which contains one acre and thirty-seven rods of land. Plowed the 17th of April, eight inches deep. On the 21st of April sowed four bushels of oats on said piece, and harrowed in the same day. The 3d of August harvested said oats. The first of Dec. threshed the oats, measured and weighed them, which weighed 2280 lbs., making 71 bushels 8 lbs. on the piece, being an average of 57 bushels, 27 lbs., per acre.

Number of bushels of oats, 71 bush. 8 lbs., at 30c.	$21.37
Value of straw,	3.00
	$24.37
Expense of cultivation and use of land,	13.50
Profits,	$10.87

ROBERT EELLS.

Westmoreland, Dec. 24, 1846.

I hereby certify, that on the 4th day of August, 1846, I surveyed a piece of land on which a crop of oats grew this year, for Robert Eells, of Westmoreland, Oneida county, N. Y., which contained one acre and thirty-seven rods of land. The survey was made with chain and compass, and is correct.

MARCUS CATLIN,
Surveyor.

Sworn and subscribed, before me, this 22d day of Dec. 1846,
R. C. NICHOLS,
Justice.

We do hereby certify, that we assisted in harvesting and measuring the within mentioned crop of oats. It grew on the land mentioned in the above certificate of the surveyor. The product as mentioned within is correct, and the sample presented is of a fair average quality of the whole crop.

ROBERT EELLS,
SIMEON HATCH,
GEORGE K. EELLS.

Sworn to, and subscribed this 24th day of December, 1846, before me,
MALACHI ELLIS,
Justice of the Peace.

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CLOVER SEED.

STATEMENT OF HENRY BREWER.

Enfield, Tompkins county.

Statement of two acres of clover seed raised the past season. The land seeded in April, 1845, on wheat, at the rate of 15 pounds of seed per acre. Large kind of seed, besides some clover chaff, from which the seed was not entirely cleaned. The clover chaff was of the small kind, so that the seed exhibited is about three-fourths large and one-fourth small kind. The land has never received any manure since it was cleared. The first crop taken from the land was in 1840, the land cleared in 1839. The timber, chestnut, oak and pine, which leaves near 100 stumps on the two acres. The soil is a yellow sandy loam, with a little gravel, and a few round sand stones.

Preparation for clover seed. The land received one bushel plaster per acre, in fall of 1844, at the sowing of the wheat, and was all harrowed in together. No plaster sown in 1845. Last spring turned stock on the lot on the 10th of May, and pastured until 8th of June; after this, sowed 7 bushels of plaster on the field, which contains 7 acres.

Began mowing for seed August 24th, and as soon as cured sufficiently for hay, drew it in, and threshed the chaff as I drew it in, from the hay on these two acres, and the remainder housed to be threshed in winter. I begin to mow for clover seed, when many of the heads are green, for if left until all is ripe, the earliest seed that ripens will be lost in gathering; and I consider it a great saving of seed and hay to cut when a little green, as the hay makes good fodder when housed, without letting it lay out and rot (as in olden times.) I think the late, green heads have seldom much seed in them, if left to ripen, and hence a great loss by mowing late.

Expense.

Two men three-fourths day, mowing,----------	$1 50
Two men raking and putting in heaps, half a day,--	75
Two men and boy one day, drawing in,----------	1 88
Threshing and cleaning seed, ----------	5 00
	$9 13

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Value of Crop.

9¼ bus. clover seed, at $5 per bu.,	$47 50
¾ bus. tailings, at $2.50,	1 88
	$49 38
Expense,	9 13
Profits,	$40 25
Int. on land should have been deducted, say,	5 60
	$34 65

P. S. I consider the hay will amply pay for threshing off the chaff, to feed to stock.

HENRY BREWER.

Enfield, Dec. 23, 1846.

The preceding account was accompanied by the certificate of the surveyor as to the quantity of land, and the affidavit of Mr. Brewer and two other persons, as to the quantity of seed, they having assisted in gathering the crop, and in threshing and measuring the same.

BARLEY, TIMOTHY SEED AND FLAX.

RAISED BY E. C. BLISS,

Westfield, Chautauque county.

BARLEY.

The soil was a clay loam, rather moist. The previous crop was brown corn, which I consider a very exhausting crop, and I put on 20 common wagon loads of manure, to make up for what the broom corn took from the soil. The ground was plowed after the manure was spread in the fall, as deep as from 8 to 10 inches, and not plowed, but dragged in the spring. I sowed with the barley as an experiment, *eleven quarts of flax seed.*

Expenses.

20 loads of manure, at 1*s*,	$2 50
Hauling and spreading,	2 50
Plowing once,	1 50
Five bushels seed,	2 50
11 quarts flax seed,	25
Carried forward,	$

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Brought forward,	$
Sowing seed,	18
Dragging before sowing, half day,	50
Rolling with light roller,	25
Dragging after sowing, half day,	50
Cutting and hauling, two days,	1 50
Threshing and cleaning,	2 00
Interest on land, at $50,	3 50
	$17 68

Product and Value.

38 bushels and 12 quarts per acre, at 4*s*,	$19 13
5 bushels 12 quarts flax seed,	4 00
Straw,	2 50
	$25 63
Expenses,	17 68
Profits,	$7 95

TIMOTHY SEED.

The soil was a clay loam, sowed last year to spring wheat, in the month of February, and half bushel of good clean timothy seed, and the grass seed dragged in with the wheat. In the spring of this year the ground was rolled, and the grass was cradled the first of August. It was laid on the ground two or three days, bound up and put in the barn for threshing.

Expenses.

Half bushel seed, at 20*s*.,	$1 25
Cradling,	75
Binding and hauling,	1 00
Interest on land,	2 80
Treshing and cleaning seed,	2 25
	$8 05

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Product and value.

By 8 bushels 13 quarts seed, at 20*s.* per bushel	$16 79
Hay after seed was threshed,	2 00
	$18 79
Expenses,	8 05
Profit,	$10 74

FLAX.

Soil, a moist black loam. Plowed twice. The previous crop was oats. Plowed in fall and also in the spring. No manure was used for the flax crop.

Expenses.

Plowing,	$1 00
Half bushel seed,	38
Sowing,	50
Pulling, 3½ days,	1 75
Threshing and cleaning seed, five days,	2 50
Spreading and taking up,	1 50
Dressing in mill,	7 87
Interest on land, ½ acre,	1 50
	$17 00

Product and value.

By 225 lbs. of clean flax,	$15 75
15 bushels cleaned seed, at 6*s.*,	11 25
	$27 00
Expense,	17 00
Balance,	$10 00

I hereby certify that I kept the above accounts myself of each of the above described crops, and they are correct and true.

ELAM C. BLISS.

Subscribed and sworn, Dec. 23, 1846, before me,

N. S. HINKLEY, *J. P.*

The affidavits of surveyor and two witnesses also accompanied the papers of Mr. Bliss.

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INDIAN CORN, CORN FODDER AND PEAS.

The committee on *corn*, *corn fodder*, and *peas*, of the New-York State Agricultural Society, respectfully submit the following report:

There were five applicants for the premiums on Indian corn. Whilst the written statements of some of the applicants are full and specific upon every point, others are somewhat vague, not definitely stating whether the amount of the crop was ascertained by weight or measurement, and whether this was done at the time of harvest, or not till the crop had become well dried in the crib. These are points which it is important for a committee to know, at least in cases where the claims of competitors are nearly equally balanced. The committee deem that the rules of the society have been *literally* complied with by each of the competitors, though some of the statements would have been more satisfactory, had they been more explicit with regard to the time and mode of measurement of the crops. Still, in the present instances, it is not probable that our awards could be varied, by any additional information upon the points alluded to. After a careful examination and comparison of the different statements, and the accompanying samples, the committee award as follows:

The first premium ($15.00) to Charles W. Eells, Kirkland, whose crop amounts to nearly 123½ bush. per acre, at a profit per acre of $40.18.

The second premium ($10.00) to Benj. Enos, De Ruyter, who raised a fraction short of 112 bush. per acre, at a net profit of $37.27.

Third premium to Robert Eells, Westmoreland, Oneida county, for 103¾ bush. per acre, at a net profit of $30.18.

To J. F. Osborn, Port Byron, for his experimental crop on 3¼ acres, to ascertain the relative value of manures, and their mode of application; the land on which long manure was plowed under, yielding about 99 bushels per acre; that on which short manure was spread on the surface producing 83 bush. per acre; whilst that on which no manure was used yielded less than 55 bushels. $20.00.

On corn fodder, there were no applicants; and but one on peas, Amos Miller, Vernon, whose crop amounts to nearly 47 bushels per acre, the sample of beautiful quality. In the absence of competition, the committee award the second premium ($5.00).

Respectfully submitted.

ASA FITCH,
JOHN McGONEGAL,
Committee.

Albany, January 21, 1847.

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INDIAN CORN CROP OF CHARLES W. EELLS.

Statement of the method of cultivation, &c., of a crop of Indian corn, raised by Charles W. Eells, of Kirkland, Oneida county, N. Y., and entered for the premium offered by the N. Y. State Agricultural Society.

The soil is a dark clay loam with a little gravel, in good condition. Previous crop, corn planted on greensward, plowed in the spring seven inches deep and ten wide, furrows lapped, manured in the hills at the rate of eight loads per acre, of rotten barn yard manure. Product per acre, 89 bushels 5 lbs. On the 12th of May last, I plowed the same piece of land which contains one acre and eighteen rods; was plowed eight inches deep and ten wide and well harrowed. On the 14th of May, was planted with the 12 rowed Dutton corn, in rows three feet and four inches apart, and the hills two feet and six inches apart. One peck of seed was used on the piece. Manured in the hills with rotten barn yard manure, eleven loads on the piece. The corn was hoed twice, and the suckers permitted to grow on the stalks; the stalks thinned out to five in a hill. The corn was permitted to stand until it was fit for harvesting, without cutting up or topping. The corn was harvested the last of October, very dry and all sound. The said crop of corn was shelled and sold to a miller, the middle of November, for 50 cents a bushel, who pronounced it very dry and first rate quality, and ground as well as old corn.

Number of bushels of corn on the piece, 137 bushels and 21 lbs., at 50 cents, being an average of 123 bushels and 27 lbs. per acre,----------	$68 68
Expense of cultivation and use of land,----------	28 50
Profit,----------	$40 18

CHARLES W. EELLS.

Kirkland, Dec. 21, 1846.

I hereby certify, that on the 31st day of October, 1846, I surveyed a piece of land on which a crop of corn grew this year, for Charles W. Eells, of Kirkland, Oneida county, N. Y., which con-

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tained one acre and eighteen rods of land. The survey was made with chain and compass, and is correct.

MORRIS R. BARTEAU, *Surveyor.*

Sworn and subscribed, this 25th day of November, 1846, before me,

AMZI DOOLITTLE, *Justice.*

We do hereby certify, that we assisted in harvesting and measuring the within mentioned crop of corn. It grew on the land mentioned in the above certificate of the surveyor. The product as mentioned within, is correct, and the sample presented is of a fair average quality with the whole crop measured and harvested.

CHARLES W. EELLS,
SIMEON HATCH,
GEORGE K. EELLS.

Sworn to and subscribed, before me, this 24th day of December, 1846.

MALACHI ELLIS, *Justice of the Peace.*

INDIAN CORN CROP OF BENJAMIN ENOS.

To the committee appointed to award premiums on corn crops:

Gentlemen—I submit the following statement of the cultivation of a field of corn containing 2 acres and 32 rods of ground.

The soil is gravel and loam, with a small quantity of sand. This field has been mowed for the last five years previous to the year 1846, without any manure having been applied during that time. It was seeded down in 1840, to timothy and clover, at the rate of 4 lbs. of clover to 8 qts. of timothy per acre, and has yielded from 1½ to 2 tons of hay per acre annually, until plowed, in 1846.

In the fall of 1845, there was about 20 loads of coarse manure carried on, and left in large heaps; and in the spring following there was carried about 80 loads more of coarse manure on to the same field, and all spread as even as possible. About the first week in May, plowed this manure under, to the depth of from 6 to 7 inches. After this plowing, carried about 80 loads into the same lot, from under my sheep sheds, and spread the same with great care, and then the whole field was harrowed until the top dressing was thoroughly mixed with the soil.

A slight furrow was made with a light plow, sufficient to mark for the rows, which were distant from each other about three feet, run-

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ning north and south, and the hills about 14 inches apart, with from 3 to 4 kernels in a hill.

The field was planted the 18th day of May, with the large white 8 rowed flint corn (a sample is herewith presented); it was hoed the first time as soon as the corn was large enough to follow the rows with the cultivator, and plastered at the rate of 2 bushels to the acre; cultivated and hoed the second time about the 20th of June, and finished hoeing the last time the 7th of July.

The corn was cut up by the ground the second week in September, and sat up in stooks. This was done by taking two rows and tying the tops of three hills of one row with three hills of the other, and then cutting and sitting around these hills, as much as was convenient, and tying the whole together at top.

In this manner it stood until the first of November, when it was all husked in the field; we finished husking the 9th of Nov.

The corn was all measured in one basket; there was 262⅔ baskets. Shelled one basket full, and wighed the corn; it weighed 52½ lbs., making 246 bushels and 14 lbs. of shell corn, from 2 acres and 32 rods of ground, equal to 111 bushels and 52 lbs. to the acre.

Expense.

The expense of the crop is as follows:

One hundred loads of coarse manure, at 12½ cts. per load,	$12 50
2 days plowing, at $2 per day,	4 00
1 man to rake the manure into the furrow,	1 00
80 loads of fine manure, at 25 cts. per load,	20 00
Harrowing and furrowing,	1 50
2½ days planting,	1 56
4 bushels plaster,	1 00
Cultivating and hoeing twice,	5 00
Hoeing once, without cultivating,	2 00
1 bushel of seed corn,	1 00
Harvesting,	14 00
Interest on value of land,	7 70
Total,	$71 26

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Value of crop.

The value of the crop is as follows:

246 bush. and 14 lbs. of corn, at 4*s.* per bushel,--------	$123 12½
Value of fodder,----------	22 00
Value of one-fourth of the manure for next crop, ------	8 12½
Total,----------	$153 25
Deduct expense of crop,----------	71 26
Total profit,----------	$81 99

Equal to $37.26\frac{9}{11}$, or nearly $37.27 per acre.

All which is respectfully submitted.

BENJAMIN ENOS.

De Ruyter, Madison Co., N. Y., Jan. 18, 1847.

Sworn and subscribed, before me, this 18th day of Jan., 1847.

STEPHEN G. SEARS, *Justice.*

Jeriah H. Reed, being duly sworn, deposeth and says: that he has worked for Benjamin Enos, for a number of years past; that he is well acquainted with the fields of corn, mentioned in his report to the State Agricultural Society, as having been planted with corn in 1846; that he assisted in drawing the manure, in plowing the ground, in cultivating and hoeing the corn, in cutting up and harvesting, and in measuring the whole of it; that he filled the basket that was shelled, and help weigh the same, in order to ascertain the precise quantity of corn raised on said field; that the basket that was shelled, was filled in the same manner as the whole, and in his opinion contained no more corn than each of the 262½ baskets, which was the whole amount raised on said field, and that all the statements made in said report are true, according to his best knowledge and belief.

JERIAH H. REED.

Sworn and subscribed, before me, this 18th day of January, 1847.

STEPHEN G. SEARS, *Justice.*

Austin Rice, being duly sworn, deposeth and says: that he worked for Benjamin Enos in the season of 1846, by the month; that he assisted in the manuring, plowing, planting, and hoeing the field of corn mentioned in his report to the State Agricultural Society; that he assisted in harvesting and measuring the corn, and from what he

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knows of the facts set forth in said report, believes them to be substantially correct.

AUSTIN RICE.

Sworn and subscribed, before me, this 18th day of January, 1847.

STEPHEN G. SEARS, *Justice.*

David Maihe, being duly sworn, deposeth and says: that he resides in the same town with Benjamin Enos, (De Ruyter;) that he is a practical surveyor, and has been for a number of years; that he is well acquainted with the field of corn mentioned in Benjamin Enos' report to the State Agricultural Society; that he surveyed said field with his chain, which agrees with the county standard, and that the true measurement of said field (rejecting remainders) is two acres and 32 rods of ground.

DAVID MAINE.

Sworn and subscribed, before me, this 18th day of January, 1847.

STEPHEN G. SEARS, *Justice.*

INDIAN CORN CROP OF ROBERT EELLS.

Statement of the method of cultivation, &c., of a crop of Indian corn, raised by Robert Eells, of Westmoreland, Oneida county, N. Y., and entered for the premium offered by the New-York State Agricultural Society.

The soil is clay and gravel, in good condition. Previous crop spring wheat, without any manure. On the 6th of May last, the land was plowed eight inches deep, and harrowed. On the 7th of May was planted with the 8 rowed yellow corn, in rows three feet and three inches apart, and the hills two feet apart; 12 quarts of seed was used on the piece; manured in the hills with hog manure; ten loads used on the piece. The corn was hoed three times, and the suckers all broke off from the stalks; stalks thinned out to five in a hill. The corn was permitted to stand until it was fit for harvesting, without cutting up or topping. The corn was harvested the middle of October. The corn was shelled, measured and weighed the middle of November, being very dry, and weighing 60 lbs. a bushel.

The piece contained one acre and twenty-three rods.

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Number of bushels corn on the piece, 118 bushels and 39 lbs., at 50 cents,	$59 34
Being an average of 103 bushels 44 lbs. per acre.	
Expense of cultivation and use of land,	29 16
Profit,	$30 18

ROBERT EELLS.

Westmoreland, Dec. 24, 1846.

I hereby certify, that on the 31st day of October, 1846, I surveyed a piece of land on which a crop of corn grew this year, for Robert Eells, of Westmoreland, Oneida county, N. Y., which contains one acre and twenty-three rods of land. The survey was made with chain and compass, and is correct.

MORRIS R. BARTEAU, *Surveyor.*

Subscribed and sworn, this 25th day of November, 1846, before me.

AMZI DOOLITTLE, *Justice.*

We do hereby certify, that we assisted in harvesting and measuring the within mentioned crop of corn. It grew on the land mentioned in the above certificate of the surveyor. The product, as mentioned within, is correct, and the sample presented is of a fair average quality with the whole crop measured and harvested.

ROBERT EELLS,
GEORGE K. EELLS,
CHARLES W. EELLS.

Sworn to and subscribed, this 24th day of December, 1846, before me.

MALACHI ELLIS, *Justice of the Peace.*

EXPERIMENTS IN MANURING CORN.

BY J. F. OSBORN, PORT BYRON.

The piece on which my corn was planted, was a small meadow, that was seeded 6 or 7 years since, with clover and timothy. Since that time, there has been a stack of hay fed on the lot every winter to sheep, and the last winter two stacks.

The soil is a gravelly loam, with a clay subsoil, from 8 to 16 inches depth below the soil.

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I divided the lots into three equal parts, with a rod pole. On the first part I put 10 cords of barn yard manure; hauled it on while wet, and spread no faster than we were ready to plough it under.

On the second part, I had no manure.

On the third part, put on 8 cords of rotten, and half or two-thirds rotten manure, and four loads of muck, &c, that was cleaned out of a ditch, which was spread on as drawn; the land having been plowed, rolled and dragged; the manure thoroughly dragged in. The three acres were plowed as near alike as practicable, from 6 to 8 inches deep, and all rolled and dragged before planting. The corn was planted alike, with a drill 3½ feet apart, and cultivated alike, except the manure. The hills were calculated to be from 1½ to 2 feet distant in the rows, with three stalks in a hill. The third acre had a spring on one corner, running across, and nearly the whole length of No. 2. This was made dry by a blind ditch. Two or three rods of the corn on the 3d acre, was not as good about the head of the spring, owing to a thin muck soil on a clay bed. The corn was best along the ditch.

FIRST ACRE.

Expense of cultivation.

To three days' work drawing manure at 12*s.* per day,------	$4 50
To half day spreading and raking in manure in furrow,----	75
May 13, 10 quarts seed corn, and 1½ days' plowing, ------	2 50
half day rolling and dragging,----------	75
half days planting with drill,----------	38
Boy planting pumpkin seed,----------	13
1½ bushels plaster mixed with 6 bushels ashes, sowed broadcast,----------	1 25
June 9, to horse and cultivator ¼ day at 8*s.*----------	25
1¾ days hoeing, at 4*s.*,----------	88
July 2, ¼ day at 8*s.*, 1½ days at 4*s.*,----------	1 00
9, " " 2¼ days at 4*s.*, hoeing and thinning,-	1 38
Nov. for 6½ days husking, and securing corn and stalks,-	3 25
Whole expense,----------	$17 02

Product.

Two hundred and twenty-seven bushels ears; 113½ bushels shelled corn weighing 59½ lbs. to the bushel. We shelled and weighed until we ascertained that it would on an average equal and rather overrun 59½ pounds to a bushel.

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Corn worth 4*s.*,	$56 75
382 sheaves of stalks,	5 00
Load of pumpkins, and some turneps,	1 00
	$62 75
Expense,	17 02
Profit,	$45 73

Stalks when perfectly dry, weighed 3,652 pounds. The manure I consider will pay for itself in the after crops.

SECOND ACRE.

Expense of cultivation.

To 1½ days plowing at 12*s.*; to rolling and dragging ½ day at 12*s.*,	$3 00
May 13 and 14, 10 quarts seed corn, 2*s.*; half day planting with drill at 6*s.*,	63
June 9, to horse and cultivator ¼ day at 8*s.*, and hoeing 1¼ days, at 6*s.*,	88
July 2, to horse and cultivator ¼ day at 8*s.*; 1½ hoeing at 4*s.*,	88
9, " " ¼ day; 1½ days hoeing and thinning,	1 00
One gill turnep seed,	13
Five days work husking and securing corn stalks,	2 50
	$9 02

Product.

116¼ bush. ears or 58⅛ bush. shelled corn, 58¼ lbs. weight at 4*s.*,	$29 06	
220 sheayes stalks, av. weight 10 lbs. each, 2200 lbs.	3 00	
17 bushels turneps at 1*s.*,	2 13	
		$34 19
Expense,		9 02
Profit,		$25 17

I consider the turneps worth 1*s.* per bushel over and above the labor of harvesting, having sold for 2*s.* per bushel.

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THIRD ACRE.

Expense of cultivation.

To 1½ days plowing at 12*s.*,	$2 25
3½ days drawing manure and spreading, 12*s.*,	5 25
¾ day rolling and dragging,	1 13
May 14, half day planting with drill, 6*s.*	38
10 quarts seed, 2*s.*,	25
1½ bushels plaster mixed with 9 bushels ashes,	1 25
June 9, horse and cultivator ¼ day,	25
1½ days hoeing, 4*s.*,	75
July 3, horse and cultivator ¼ day,	25
2½ days hoeing,	1 25
10, horse and cultivator ¼ day,	25
3 days hoeing and thinning,	1 50
gill turnep seed 1*s.*, 6 days harvesting, &c., at 4*s.*,	3 13
	$17 89

Product.

190½ bush. ears or 95¼ bush. shelled corn, 59 lbs. weight 4*s.*	$47 63
300 sheaves average 11 lbs., 3,300 pounds,	4 00
101 bushels flat turneps, 1*s.*,	12 62
	$64 25
Deduct expense,	17 89
	$46 36
Profit second acre,	25 17
	$21 19
Loss by experiment as I had plenty of manure which I might have applied to all,	8 00
	$13 19

I have had the land surveyed by J. W. Sawyer, with chain and compass. He made of the first, $1\frac{12}{100}$ acres.
Of the second, $1\frac{6}{100}$ do
Of the third, $1\frac{12}{100}$ do

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Certificate.

We, the undersigned, helped measure the foregoing crops. We have no doubt but that it was correctly measured.

THOMAS HUBBARD,
JOSEPH F. OSBORN,
PHILIP SNYDER.

Sworn and subscribed before me, the 1st day of Jan., 1847.

JAMES PINE,
Justice of the Peace.

I certify that the within statement of land is according to a survey made by me. J. W. SAWYER, *Surveyor.*

Sworn and subscribed before me, this 1st day of Jan., 1847.

JAMES PINE,
Justice of the Peace.

PEAS.

PEA CROP OF AMOS MILLER.

Statement of Amos Miller on a crop of peas.

The condition of soil at the commencement of cultivation, was air. Soil, gravel and clay loam. Previous crop, corn once plowed, ten loads of manure applied per acre, harrowed once and hoed twice. No manure the present season. Plowed once ten inches deep; harrowed and sowed broadcast, with eight and one half bushels of white french peas, and covered them with cultivator. Sowed the 12th of April

Harvested with scythe, cleaned with common fan mill.

Whole amount of crop, one hundred and sixty-four bushels; sold the same for 5 shillings per bushel, ---------- $102 50
Value of straw,---------- 10 00

$112 50

Expense of getting in crop, ----------	$4 50	
" seed,----------	7 81	
" havesting, threshing and cleaning,	7 00	
		$19 31

Profit,---------- $93 19

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Amos Miller, being duly sworn, deposes and says, that the piece of land mentioned in the certificate hereunto attached, embraces all the peas raised on his farm the present season, and that the quantity mentioned in the above statement is correct according to his best knowledge and belief, and that the sample accompanying this statement, is taken from the peas raised on this piece of land, and is a fair sample of the whole crop.

AMOS MILLER.

Sworn and subscribed before me, this 30th day of Dec., 1846.

ERASTUS W. CLARK,
Justice of the Peace.

Oneida County, ss.

Edward Rivenburg and Riley Murray, being severally and duly sworn, depose and say that they assisted in measurning the land mentioned in the certificate, hereunto attached; also in measuring the grain raised on said land, and that the amount mentioned in the foregoing statement is correct.

EDWARD RIVENBURG,
RILEY MURRAY.

Sworn to, and subscribed before me, this 30th day of Dec., 1846.

ERASTUS W. CLARK,
Justice of the Peace.

Norton G. Merrell, of the town of Vernon, being duly sworn, deposeth and says, that in the summer of 1846, he surveyed a certain field of peas for Amos Miller, of said town, and that the quantity of land contained therein was 3 51-100 acres and that said survey embraced all the peas in the said field.

And further this deponent says not.

NORTON G. MERRELL.
Surveyor.

Sworn and subscribed to, before me, this 29th day of Dec., 1846.

ERASTUS W. CLARK,
Justice of the Peace.

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ROOT CROPS.

The committee to whom was referred the duty of awarding premiums on root crops, respectfully report:

That they have attended to the duties assigned them, and have fisrt to express their regret that the applications for premiums were not more numerous. There were only three applications for the premiums—two for carrots and one for beets.

William Wright, of Vernon, Oneida county, raised on 1 $\frac{9.7}{100}$ of an acre, 909 bushels at an expense of $25.76, valued at 1 shilling per bushel, leaving a profit of $89.93.

We award to Mr. Wright the 1st premium.

William Risley, Fredonia, Chautauque county, raised on 1$\frac{7}{8}$ of an acre 1,590½ bushels of carrots, part of which were of the Long Orange, and a part of the Long White variety. This crop was raised at an expense of $109.25, and valued at 1 shilling per bushel, leaves a profit of $89.53.

We award to Mr. Risley the 2d premium.

J. F. Osborn, of Port Byron, raised on 1 acre and 15 roods, 774 bushels of sugar beets at an expense of $29.24, leaving a profit of $67.51, valuing the beets at 1 shilling per bushel.

We award to Mr. Osborn the 3d premium. C. N. BEMENT.

Albany, January 20, 1847. *Chairman.*

CARROTS.

CROP OF WILLIAM WRIGHT, VERNON, ONEIDA COUNTY.

The soil on which carrots grew was bottom land, black mould and gravel, upon which corn had been raised the previous year, and 8 loads of barnyard manure used upon it. The land was plowed twice 7 inches deep, and 1½ pounds of seed planted the 15th of May, with drill barrow. There was no manure applied to the crop. The quantity raised was 909 bushels and 25 pounds, at 45 pounds to the bushel.

Expenses.

Seed, 1½ pounds,	$1 88
Plowing, 1½ days,	2 25
Harrowing, 1½ days,	75
Drilling, 1½ days,	38
Hoeing, 6 days,	4 50
Harvesting, &c., 20 days,	12 50
Interest on land at 7 per cent.,	3 50
	$25 76

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Product and Value.

909 bushels and 25 pounds, at 1*s.* per bushel,	$113 69
Expenses,	25 76
Profit,	$87 93

Oneida county, ss:

William Wright being duly sworn, says the above is a true statement of a crop of carrots raised by him, and measured by a sworn surveyor, and that the account of cultivation and product as above stated, is true according to the best of this deponent's knowledge and belief.

WILLIAM WRIGHT.

Subscribed and sworn before me, this 24th day of Dec., 1846.

L. T. MARSHALL,
Justice of the Peace.

Norton G. Merrell of the town of Vernon, being duly sworn deposeth and saith, That in the autumn of 1846 he surveyed a certain piece of carrots for William Wright of said town, and that the quantity of land contained therein was $\frac{6.9}{100}$ of an acre.

And this deponent further says, that he surveyed another certain piece of carrots for the said Wright, and that the quantity of land contained therein was $\frac{67}{100}$ of an acre; and further this deponent says not.

NORTON G. MERRELL, *Surveyor.*

Sworn and subscribed to before me, this 29th day of Dec., 1846.

ERASTUS W. CLARK,
Justice of the Peace.

Oneida county, ss:

William Wright, George W. Wright and Matthew Gale being duly sworn depose and say, that they severally assisted in harvesting the within crop of carrots, and also that they assisted in measuring and weighing the said crop, and that the actual amount thereof was as

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herein stated, nine hundred and nine bushels and twenty-five pounds—allowing forty-five pounds to the bushel.

WILLIAM WRIGHT,
GEORGE W. WRIGHT,
MATTHEW GALE.

Sworn and subscribed before me, this 28th day of Dec., 1846.

LEVI T. MARSHALL,
Justice of the Peace.

CARROT CROP OF WILLIAM RISLEY.

The land on which the crops mentioned below were harvested, has been used for carrots and beets (principally carrots) for the past three years. It was plowed late in the fall preceding the crop, and in the spring covered with a light dressing of manure, and the seed sown in drills 10 inches apart, on the 20th of April, after being prepared as follows: Soaked in water 12 hours, and after draining off the water a sufficient quantity of dry earth was mixed with it to absorb the water remaining and leave it in a proper state for vegetation, and when the sprouts appeared, which was in three or four days, put into the ground; seed sprouted in this manner comes up immediately, and the earth can be moved around the plants before the weeds start, and consequently prevent them from starting, which will save much labor in tilling the crop. At the first weeding the plants were thinned out to three or four inches in the row. The ground was kept clean from weeds, and the crop looked well until about the 1st of August, when a mildew or rust struck the tops of the white carrots in spots, which spread over a majority of the piece, and in large spots the tops entirely dried up and died, and many of the carrots died out; but after a plentiful rain about the 1st of September, the tops of those not rotted, sprouted and began to look green again, and when harvested about the 20th of October, were fresh and green, and entirely covered the ground. The Long Orange carrots did not suffer materially from the rust, and as they grew deeper, and the root entirely covered with earth, was not so much affected by drought.

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Expenses of Crop.

25 loads stable manure, 5*s.*,	$15 62
1½ days plowing, 10*s.*,	1 88
20 days raking and sowing, 5*s.*,	12 50
30 days weeding and thinning, 1st time, 5*s.*,	18 75
20 do do 2d time, 5*s.*,	12 50
12 do hoeing, 3d time, 5*s.*,	7 50
36 do harvesting, 5*s.*,	22 50
10 pounds of seed, 6*s.*,	7 50
Interest on land,	10 50
	$109 25
1,590¼ bushels of carrots, 1*s.*,	$198 78
Deduct expenses,	109 25
Nett profit,	$89 53

WM. RISLEY.

We the subscribers being duly sworn, testify that we measured the land and carrots raised and harvested therefrom for William Risley, and that the produce was as follows:

⅛	of acre of Long Orange carrots,	163½	bushels.	
⅛	do	do	160	do
⅛	do	do	153	do
⅛	do	do	151½	do ½ acre 628 bush.
⅛	Long White Field		163½	do
⅛	do	do	145	do
⅛	do	do	139½	do
⅛	do	do	137½	do 1 acre, 1,213½ bush.
⅛	do	do	127¾	do
⅛	do	do	127	do
⅛	do	do	122	do
1⅜	acres of land bearing		1,590¼	bushels.

The above carrots were harvested in dry weather, and quite clean from earth, and weighed 56 pounds to the bushel, as measured.

WILLARD TURK,
GEORGE D. HINCKLEY.

Subscribed and sworn before me,
November 24th, 1846.

A. HINCKLEY, *Justice.*

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SUGAR BEETS.

CROP OF J. F. OSBORN.

I have raised on 1 acre and 15 rods, as surveyed by Mr. Sawyer, 774 bushels sugar beets, with about 30 bushels ruta baga, on the same land on which I had 901 bushels last year.

April 10th,	Hauled on 10 loads of common stable manure; spread and plowed. April 25th, dragged, 2 days, 12*s.*,	$3 00
May 19th,	Drawed on 14 loads rotten manure, 1½ days,----	1 88
" 20th,	Manure spread, plowed and dragged, 1½ days,--	2 25
" 22d,	To ridging with one horse, ½ day,----------	38
" "	Three days planting, 4*s.*, ----------	1 50
" "	Two and a half pounds seed, 5*s.*, ----------	1 56
June 24th,	Four days hoeing; July 10, 6½ days hoeing, 4*s.*,	5 25
July 17th,	To 7½ days hoeing; (19th,) 1½ do,----------	4 50
" 20th,	Sowed ruta bagas where beets were missing,----	13
	Transplanting beets, 1 day; hoeing 4½ days, 4*s.*,	2 75
Nov.	Harvesting and securing crop, 12 days, 4*s.*,----	6 00
		$29 20
Product, 774 bushels at 1*s.*,----------		96 75
Profit, ----------		$67 55

The beets were struck with the blight, and carrots and ruta bagas were affected something like the potato disease, and when harvesting commenced, those above ground had commenced rotting.

J. F. OSBORN.

Port Byron.

We, the undersigned, helped measure the foregoing crop, and we have no doubt that they were correctly measured.

THOMAS HUBBARD,
JOSEPH F. OSBORN,
PHILIP SNYDER.

Sworn before me the 1st day of January, 1847.

JAMES PINE, *Justice Peace.*

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I certify the within statement of land is according to a survey made by me.

J. W. SAWYER,
Surveyor.

Sworn and subscribed before me, this 1st day of Jan., 1847.

JAMES PINE, *Justice Peace.*

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FRUITS.

The committee to whom was referred the selection of the best varieties of apples, for domestic use and exportation, to be cultivated in the State of New-York, report:

That, much to their regret and disappointment, they have received far less information from the different sections of the State to which their circulars were addressed than they anticipated, and therefore, that the sum of information, which they hoped to impart to the society, has been less than they would otherwise have been enabled to give. But from the sources of intelligence and observation within their control, they have resolved to report such conclusions as they considered would be most valuable to the public, and best discharge their duty to the society.

The undersigned consider the cultivation and growth of the apple in the United States as a subject of great and increasing importance. The apple is, indeed, altogether the most important of our fruits; and now become, by long use in its adaptation to edible purposes, not only in its natural condition, but through the various branches of cookery, a necessary article of domestic consumption with a large portion of our inhabitants, besides being a most grateful luxury to all who know its value and enjoy its flavor. It has also become an important article of export to Europe, the West Indies and South America; and it must soon become, with the increasing commercial facilities in which our people are engaged, an article of export to the countries beyond the Cape of Good Hope. The apple orchard is, consequently, an item of national wealth, yielding large annual returns to our agriculture, and repaying in the most bountiful degree, all the care, and labor, and solicitude, which its pains-taking cultivators may expend upon it. As such, it is worthy all the at-

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tention with which the State Agricultural Society regard it, and its future increase and prosperity will richly reward all the efforts which may be made in its encouragement.

Fortunately for us, the apple, in many of its varieties, and in great perfection, thrives in almost every part of our great State; and with proper cultivation, yields bountiful crops. Its favorite latitude, we consider lies between 40° and 44′ north; and between these ranges, flourish probably the best specimens the world has ever produced. As a testimony to the excellence of some of our New-York soils for its production, it may be stated that the very best and most popular variety known in Europe, the Newtown pippin, originated in our State; and several others of equal value for domestic uses, have had their origin with us. It therefore well becomes the people of our noble State, to encourage its cultivation to the utmost, and also the State Agricultural Society to offer every inducement for further progress in developing the acknowledged excellence of its varieties.

The undersigned, however, would but feebly discharge their duties towards this important subject, did they fail to impress upon our fruit growers, the manifest necessity of cultivating the best, and only the best varieties; and to discourage, by all possible means, the careless and imprudent practice, too often prevailing, of growing inferior kinds, when, with trifling expense and care, the best can be produced equally well, and to infinitely more advantage, both in an economical and pecuniary view. The expense of rearing and cultivating inferior fruits is hardly less than that of the best, while the one is almost, and in many cases absolutely worthless, and the other in the highest degree profitable; and to secure the best, it is only necessary, on the part of the cultivator, to properly understand the subject, and to appreciate the surprising difference between good and bad varieties.

The undersigned are well aware that great fraud and impositions have been, and are continually practised by empirics in fruit culture, who annually traverse the country as "grafters," and in their indiscriminate employment by many of our farmers and orchardists, often shamefully impose upon their employers by inserting

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worthless varieties in their trees, which are only detected after years of painstaking solicitude on the part of the cultivator, who has either then to abandon his blighted expectations altogether, or renew his orchards with well selected fruits, after so dearly paying the penalty of his ignorance, or his inattention. To guard against this bad practice is one object of the labors of this committee, and to impress upon the attention of every fruit grower the most diligent care in the selection of his fruits, as well as in their future cultivation. And although circumstances may oblige many orchardists to employ itinerant grafters to do their work, they should always be sure, either from their own personal selections, or from the selections of those upon whom they can rely, that they obtain what they really require. Hence the necessity that every one who cultivates fruit, should, to a considerable extent, understand the subject. This committee are familiar with instances in which the above named practice has resulted in a second, and even a third grafting before the desired fruits were obtained, wearing out the time of almost one generation of man, a source of continued chagrin, mortification and suspense, all which might have been saved with a slight knowledge of the subject. Such occurrences, the undersigned cannot too earnestly urge our orchardists to prevent.

Thriving in almost any description of soil which will produce the grains and grasses of our climate, the apple is a rapid grower, and with but trifling care, ultimately arrives at maturity, against disadvantages under which almost any other fruit would perish. It is among the trees *natural* to our climate and soil; and in almost every habitable portion of our State, that husbandman who neglects its culture is heedless of his own interest, and regardless of one of the great articles of family comfort, and cheap luxury; and in its omission is guilty of disregarding one of the choicest bounties which a kind Providence has placed within his reach; and we cannot but regard him, who, blessed with the opportunity, neglects the cultivation of good fruits, as one derelict in duty, both to himself, to society and to his posterity.

The committee have been charged by the State Agricultural Society with the selection of not exceeding thirty varieties of apples, which shall, in their opinion, be best adapted for domestic consump-

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tion and exportation, as an article of profitable cultivation; and although the committee do not consider that so many varieties as are here enumerated are necessary, or perhaps advisable for the profitable cultivation of every orchardist, they are aware that in some sections of the State, certain descriptions of apples are of easier and more perfect cultivation then in others; and in the list which they offer, they trust that among so many, there will be more or less of them found, which will develop all their excellence in some one locality. Apples, like all other productions of the earth, have their favorite soils, altitudes, and climates, out of which they scarcely pay the expense of cultivation. Yet, it is believed, that in the list reported, there are some which will thrive in almost every section of the State, and produce a remunerating crop to the cultivator. This result, a *trial* must determine. But he must be a slow observer, who cannot by observation, compare his own advantages of soil, altitude, and climate, with those on which, a variety sought, exists in luxuriance, and make selections accordingly.

Any variety of apple, to be worthy of extensive cultivation, should be, as nearly as possible, perfect of its kind. Some are quite so. A positively good apple should possess the following qualifications:

1st. The wood of the tree should be hardy and vigorous in its growth, spreading in its shape, graceful in its appearance, and an abundant and annual bearer.

2d. The fruit should be uniformly distributed over the tree, not in clusters, but with a strong stem holding it firmly to the limb, and not subject to fall in ordinary high winds.

3d. The size should, as near as may be, range from small medium, to moderately large; such usually combining higher flavor, and sounder quality than the quite small, or the extraordinarily large varieties. A very small apple is apt to be astringent; a very large one, coarse and spongy. The flesh of a perfect apple should be solid, heavy, juicy and brittle. It should be, also, brisk in its flavor, which should be always agreeable, whether that flavor be tart, sub-acid, or sweet.

4th. Its shape should be fair, of agreeable appearance, small in the core, and delicate in its skin.

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Such qualities constitute a perfect apple; and the varieties we have chosen, in the names reported for consideration, mostly possess these qualities in an eminent degree.

In addition to the approbation which the list selected claims from the undersigned, they are warranted in their opinions by the general popularity of these fruits where they are best known in their favorite localities, and where long use has stamped their excellence too firmly to be questioned. The principal qualities regarded, are their superiority for the table and the kitchen; and in the case of the winter fruits, that of long keeping. As *exclusively* a cider fruit, the committee have paid it no attention; as for all necessary purposes of that article, a decidedly superior table and kitchen apple will make the best of cider.

Aside from its edible uses to man, the apple is an important and economical food for most kinds of farm stock. Milch cows thrive upon it when fed in moderate quantities, and it adds to the quantity and quality of their milk. They are also an excellent food in making beef. Horses eat them readily; for them they constitute a succulent and healthy food. Sheep, swine, and geese, will fatten altogether on good apples; and for all kinds of poultry they are desirable and nutricious food. The best varieties, too, are comparatively as valuable for stock feeding, as for market purposes; and for stock feeding alone, the best varieties of both, sweet and acid, should be cultivated. Indeed, for stock feeding solely, no cheaper, more convenient, or valuable *green* food can be grown, for fall and winter forage, than the apple; and as such, it is strongly recommended to the general farmer. They are as easily housed and preserved from frost, as the root crops, and equally convenient for ordinary feeding.

It is a source of pleasure to remark, that all the varieties of the apple which have passed under the review of the committee, the best are those of American origin; and those, decidedly the best our climate affords, and which have attained the most deserved popularity abroad, are seedlings of the United States, although many superior kinds have been introduced here from Europe. The prices of the best American apples in London and Liverpool markets, are

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usually five to ten dollars a barrel; much depending on their kind, the manner in which they are put up, and their sound keeping qualities.

The varieties of apple which the undersigned have selected, and recommend to the society under the resolution of 1846, is as follows:

Early Harvest, Early Strawberry, Large Yellow Bough, Early Joe, and Williams' Favorite, all which are summer apples.

Fall Pippin, Golden Sweet, Gravenstein, Jersey Sweeting, Porter, and Rambo, Detroit Red, Bellebonne, for autumn uses.

Baldwin, Yellow Belle Fleur, Hubbardston Nonsuch, Jonathan, Newtown Pippin, Northern Spy, Blue Pearmain, Rhode Island Greening, American Golden Russet, Roxbury Russet, Swaar, Ladies' Sweeting, Talman's Sweeting, Esopus Spitzenburgh, Vandervere, Waxen Apple, Westfield Seeknofurther, for winter use and exportation.

So numerous are the names and synonymes, of many of our best apples, that for a full understanding of the subject, the committee append such descriptions of each of the above named kinds, with the several synonymes by which they are differently known, as will render them familiar to the public. In this branch of their labors, they are highly favored in having access to the admirable treatise on "The Fruits and Fruit Trees of America," by A. J. Downing, of Newburgh, N. Y., a gentleman among the most eminent of American pomologists, and whose work they take especial pleasure in recommending to the attention of every fruit grower in our country. The descriptions are thus prefaced in a note appended to them in his work:

"In describing apples, we shall designate the size by comparison, as follows: Small, as the English Golden Pippin; medium size, as the Newtown Pippin; large, as the Yellow Bellflower and Fall Pippin; as we consider this reference to a standard, generally known, better than an exact description by measure, owing to the variation in different soils and seasons. The blossom end, apex, or crown of the fruit, is called the *eye*; but we shall, for the sake of

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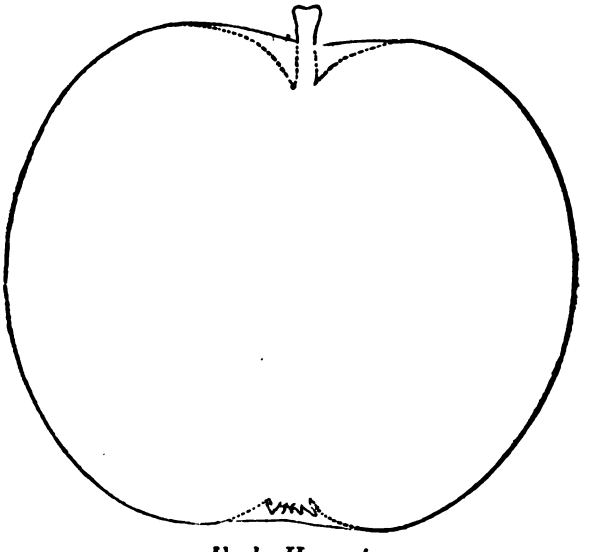
precision, call the remains of the blossom still found there the *calyx*, and the hollow in which it is placed the basin."

The committee will also add, that when the descriptions, taken from Mr. Downing, are not sufficiently full, they have added their own remarks in parenthesis, and in one or two varieties, not described by him, the descriptions are their own.

Early Harvest.

An American apple; and taking into account its beauty, its excellent qualities for the dessert and the cooking, and its productiveness, we think it the finest early apple yet known. It begins to ripen about the first of July, and continues in use all that month.



Early Harvest.

The smallest collection of apples should comprise this variety. Form round, above medium size, rarely a little flattened. Skin very smooth, with a few faint white dots, bright straw color when fully ripe. *Stalk* half to three-fourths of an inch long, rather slender, inserted in a hollow of moderate depth. *Calyx* set in a shallow basin. *Flesh* very white, tender and juicy, crisp, with a rich, sprightly, sub-acid flavor. The young trees of moderate vigor, with scarcely diverging shoots. Manning errs by following Coxe in calling this a flat apple.

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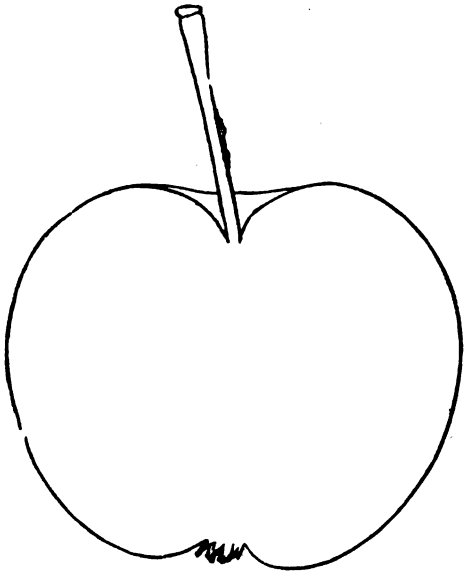
Early Strawberry Apple.

A beautiful variety which is said to have originated in the neighborhood of New-York, and appears in the markets there about the middle of July. Its sprightly flavor, agreeable perfume, and fine appearance, place it among the very finest summer apples. It is quite distinct from the Early Red Margaret, which has no fragrance, and a short stem.



Early Strawberry.

Fruit roundish, narrowing towards the eye. Skin smooth and fair, finely striped and stained with bright and dark red, on a yellowish white ground. Stalk an inch and a half long, rather slender and uneven, inserted in a deep cavity. Calyx rather small, in a shallow, narrow basin. Flesh white, slightly tinged with red next the skin, tender, sub-acid, and very sprightly and brisk in flavor, with an agreeable aroma.

Large Yellow Bough.

A native apple, ripening in harvest time, and one of the first quality, only second as a dessert fruit to the Early Harvest. It is not so much esteemed for the kitchen as the latter, as it is too sweet for pies and sauce, but it is generally much admired for the table, and is worthy of a place in every collection.

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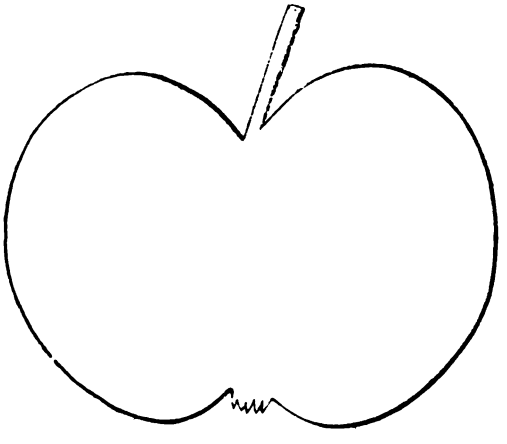
Fruit above the middle size, an oblong-ovate in form. Skin smooth, pale, greenish yellow. Stalk rather long, and the eye narrow and deep. Flesh white, very tender and crisp when fully ripe, and with a rich sweet sprightly flavor. Ripens from the middle of July to the tenth of August. Tree moderately vigorous, bears abundantly, and forms a round head.

[This is the very best *early* apple for baking, and inferior to none whatever as an eating fruit in its season.]

Early Joe.

[This apple is not described by Mr. Downing. In the "Horticulturist," for February, 1847, we find it figured and described by Mr. William R. Smith, of Macedon, Wayne county, N. Y., thus: "The 'Early Joe' is a most desirable fruit. Sprightly, rich, and plentiful in juice, it combines in an eminent degree all those qualities which are acceptable to most persons, in a dessert apple. We think it may safely be set down as equal to the best of any season. It originated in the orchard of Oliver Chapin, East Bloomfield, Ontario county, N. Y.



Early Joe.

"Fruit medium size, roundish, considerably flattened; skin smooth and shining, when well grown; if crowded (on the tree) black spots are not unfrequent; nearly covered, where exposed to the sun, with irregular stripes of deep and pale red, through which appear numerous green spots.

"Stalk rather slender, and inserted in a deep, and generally russetted cavity. Calyx small, closed; ends of the segments reflexed.

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"Flesh white, extremely tender, of a mild and most agreeable flavor. Ripe middle of August. Tree has slow growth, and dark colored wood and foliage."

To the excellence of this apple, the flavor of which is slightly sub-acid, the committee can add their own testimony. Wherever known, it is one of the most popular apples of western New-York.]

WILLIAMS' FAVORITE.

A large and handsome dessert apple, worthy of a place in every garden. It originated at Roxbury, near Boston, bears abundantly, and ripens from the last of July to the first of September.

Fruit of medium size, oblong, and a little one-sided. Stalk an inch long, slender, slightly sunk. Calyx closed, in a narrow angular basin. Skin very smooth of a light red ground, but nearly covered with a fine dark red. Flesh yellowish-white, and of a very mild and agreeable flavor.

[This variety was only a few years since brought into notice. It is destined to a wide popularity in the severer climate and central parts of our State, where the latitude corresponds with that of Massachusetts.]

FALL PIPPIN.

The Fall Pippin is, we think, decidedly an American variety, Thompson and Lindley to the contrary, notwithstanding. It is, very probably, a seedling raised in this country, from the *White Spanish Reinette*, or the Holland pippin, both of which it so much resembles, and from which it, in fact, differs most strongly in the season of maturity. The Fall Pippin is a noble fruit, and is considered the first of autumn apples in the middle States, where its beauty, large size, and its delicious flavor for the table or for cooking, renders it very popular.

Fruit very large, roundish, generally a little flattened, pretty regular, sometimes with obscure ribs at the eye. Stalk rather long, three-fourths of an inch, projecting considerably beyond the fruit, (which distinguishes it from the Holland Pippin,) set in a rather small, shallow, round cavity. Calyx not very large, rather deeply sunk in a round, narrow cavity. Skin smooth, yellowish-green, becoming a fine yellow, with often a tinge of brownish blush, on one side, and with a few scattered dots. Flesh white, very tender and mellow, with a rich, aromatic flavor. Ripe October to December.

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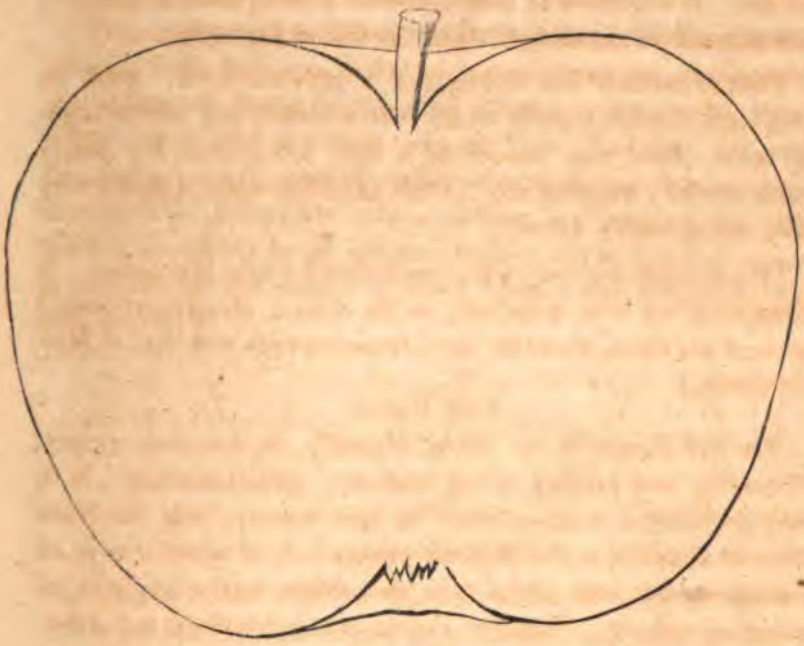

FALL PIPPIN.

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There are several spurious sorts; the true one is always rather flattened, with a projecting stalk.

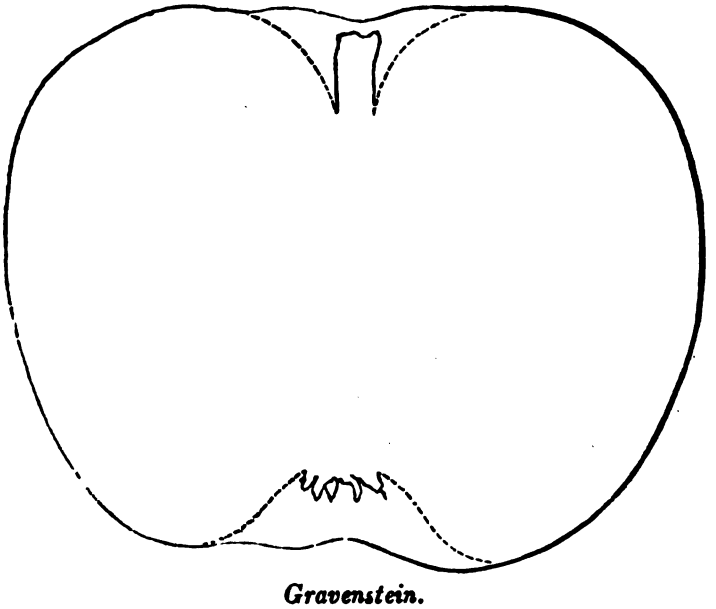
GOLDEN SWEET.

A celebrated Connecticut fruit sent us by Mr. Lyman, of that State. Fruit above the medium size, roundish, scarcely flattened, fair, and well formed. Skin, when fully ripe, pale yellow, or straw color. Stalk about an inch long, slender at its junction with the fruit. Calyx closed, and set in a basin of moderate depth. Flesh tender, sweet, rich and excellent. The tree is a pretty free grower, and bears large crops. This, we think, will prove a valuable sort. Ripe in August and September.

[Mr. Downing "thinks" this *will* prove a valuable sort. *We* have for many years *known* it to be one of the very best early autumn apples grown. The tree is a rapid grower, very hardy, a full and constant bearer; and as the apples ripen, the fruit branches hang with all the beauty and luxuriance of ripe oranges to the eye. It is, besides, a good keeper for the season, and a most desirable and profitable market fruit, growing remarkably fair, and free from blemish.]

GRAVENSTEIN.

A superb looking German apple, which originated at Gravenstein, in Holstein, and is thought one of the finest apples of the north of



Gravenstein.

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Europe. It fully sustains it reputation here, and is, unquestionably, a fruit of first rate quality. Fruit large, rather flattened, and a little one-sided or angular, broadest at the base. Stalk quite short and strong, deeply set. Calyx large, in a wide, deep, rather irregular basin. Skin greenish yellow at first, but becoming bright yellow, and beautifully dashed and pencilled, and marbled with light and deep red and orange. Flesh tender and crisp, with a high flavored, somewhat aromatic taste. Ripens with us in September and October, but will keep a month longer. The trees are very thrifty strong growers, and bear when young.

Jersey Sweeting.

A very popular apple in the middle States, where it is not only highly valued for the dessert, but, owing to its saccharine quality, it is also planted largely for the fattening of swine, which are allowed to run under the trees and gather the fruit as it falls. It is a highly valuable sort, and deserves extensive culture.

Fruit medium size, roundish-ovate, tapering to the eye. The calyx is small, closed, very slightly sunk, in a small plated basin. Stalk half an inch long, in a rather narrow cavity. Skin thin, greenish yellow, washed and streaked, and often entirely covered with stripes of pale and dull red. Flesh white, fine grained, and exceedingly juicy, tender, sweet and sprightly. Young wood, stout, and short jointed. This apple commences maturing about the last of August, and continues ripening till frost.

Porter.

A first rate New-England fruit, raised by the Rev. S. Porter, of Sherburne, Massachusetts, and deservedly a great favorite in the Boston market. The fruit is remarkably fair, and the tree is very productive.

Fruit rather large, regular, oblong, narrowing to the eye. Skin clear, glossy, bright yellow, and when exposed, with a dull blush next the sun. Calyx set in a narrow and deep basin. Stalk rather

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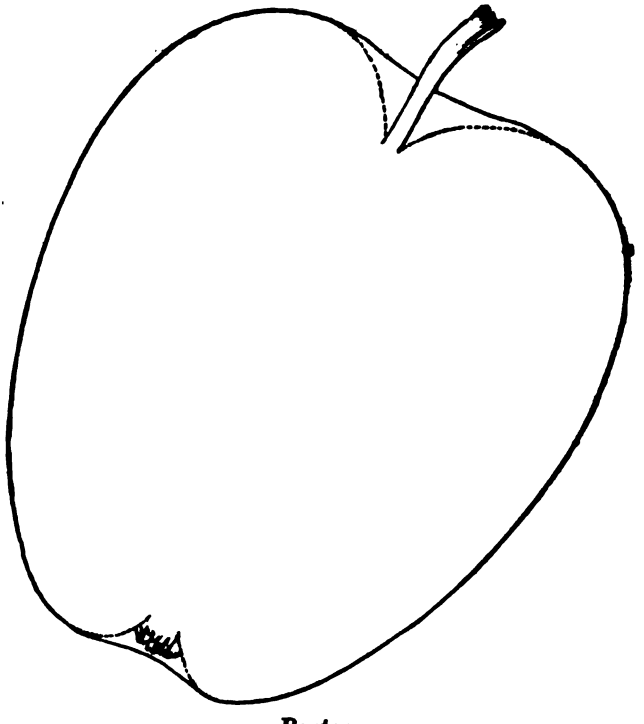

Porter.

slender, not three-fourths of an inch long. Flesh fine grained, and abounding with juice of a sprightly agreeable flavor. Ripens in September, and deserves general cultivation.

[This apple thrives in great perfection and excellence in the State of New-York.]

Rambo.

The Rambo is one of the most popular autumn fruits to be found in the Philadelphia markets. It is a highly valuable apple for the table or kitchen, and the tree thrives well on light sandy soils, being a native of the banks of the Delaware.

Fruit of medium size, flat. Skin smooth, yellowish white in the shade, streaked and marbled with pale yellow and red in the sun,

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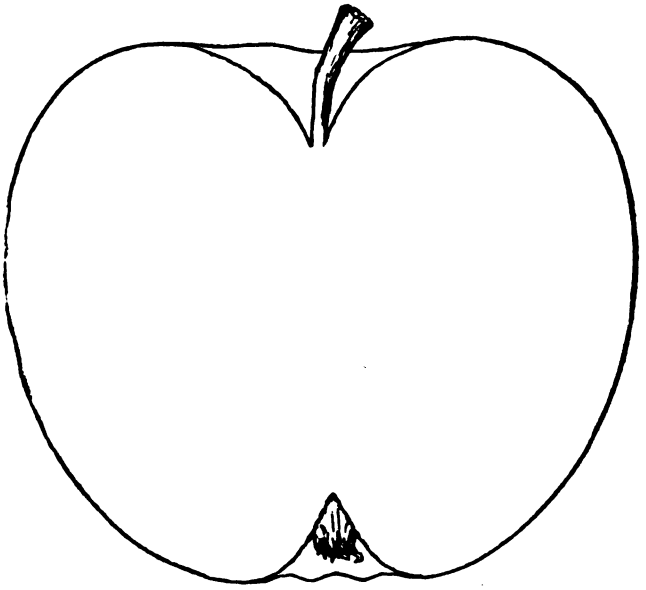
Massachusetts, and is more largely cultivated for the Boston market than any other sort. It bears most abundantly with us, and we have had the satisfaction of raising larger, more beautiful, and highly flavored specimens here, than we ever saw in its native region. The Baldwin, in flavor and general characteristics, evidently belongs to the same family as our Esopus Spitzenburgh, and deserves its extensive popularity.



Baldwin.

Fruit large, roundish, and narrowing a little to the eye. Skin yellow in the shade, but nearly covered and striped with crimson, red, and orange in the sun; dotted with a few large russet dots, and with radiating streaks of russet about the stalk. Calyx closed, set in a rather narrow, plaited basin. Stalk half to three-fourths of an inch long, rather slender for so large a fruit, planted in an even, moderately deep cavity. Flesh yellowish white, crisp, with that agreeably mingling of the saccharine and acid which constitutes a rich, high flavor. The tree is a vigorous, upright grower, and bears most abundantly. Ripe from November to March, but with us, is in perfection in January.

[To the above good qualities we add, that it is hardly surpassed as a cooking apple of most delicious flavor. It luxuriates in the fine warm soils of Western New-York.]

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Hubbardston Nonsuch.

A fine, large, early winter fruit, which originated in the town of Hubbardston, Mass., and is of first rate quality. The tree is a vigorous grower, forming a handsome branching head, and bears very large crops. It is worthy of extensive orchard culture.

Fruit large, roundish-oblong, much narrower near the eye. Skin smooth, striped with splashes, and irregular broken stripes of pale and bright red, which nearly cover a yellowish ground. The calyx open, and the stalk short, in a russetted hollow. Flesh yellow, juicy, and tender, with an agreeable mingling of sweetness and acidity in its flavor. October to January.

[This is a new and exceedingly popular apple in Massachusetts. As it originated in the elevated and rocky lands in the northern part of Worcester county, it promises well in the same descriptions of soil in this State.]

Jonathan.

The Jonathan is a very beautiful dessert apple, and its great beauty, good flavor, vigorous growth and productiveness, unite to recommend it to orchard planters. The original tree of this new sort is growing on the farm of Mr. Philip Rick, of Kingston, New-York, a neighborhood unsurpassed in the world for its great natural congeniality to the apple. It was first described by the late Judge Buel, and named by him, in compliment to Jonathan Hasbrouck, Esq., of the same place, who made known the fruit to him. The color of the young wood is a lively light brown, and the buds at the ends of the shoots are large.

Fruit of medium size, regularly formed, roundish-ovate, or tapering to the eye. Skin thin and smooth, the ground clear light yellow, nearly covered by lively red stripes, and deepening into brilliant or dark red in the sun. Stalk three-fourths of an inch long, rather slender, inserted in a deep regular cavity. Calyx set in a deep, rather broad basin. Flesh white, rarely a little pinkish, very tender and juicy, with a mild, sprightly flavor. This fruit, evidently, belongs to the Spitzenburgh class. November to March.

Newtown Pippin.

The Newtown Pippin stands at the head of all apples, and is, when in perfection, acknowledged to be unrivalled in all the quali-

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ties which constitute a high flavored dessert apple, to which it combines the quality of long keeping without the least shrivelling, retaining its high flavor to the last. It is very largely raised in New-York and New-Jersey for exportation, and commands the highest price in Covent Garden market, London. This variety is a native of Newtown, Long Island, and it requires a pretty strong, deep, warm soil, to attain its full perfection, and in the orchard it should be well manured every two or three years. For this reason, while it is planted by acres in orchards in New-York and the middle States, it is rarely raised in large quantities or with much success in New-England. On the Hudson, thousands of barrels of the fairest and richest Newtown Pippins are constantly produced. The tree is of rather slender and slow growth, and even while young, is always remarkable for its rough bark.

Fruit of medium size, roundish. a little irregular in its outline, caused by two or three obscure ribs on the sides—and broadest at the base, next the stalk; about three inches in diameter, and two and a half deep. Skin dull green, becoming olive green when ripe, with a faint, dull brownish blush, on one side, dotted with small gray specks, and with delicate russet rays around the stalk. Calyx quite small and closed, set in a narrow and shallow basin. Stalk half an inch long, rather slender, deeply sunk in a wide, funnel-shaped cavity. Flesh greenish-white, very juicy, crisp, with a fine aroma, and an exceedingly high and delicious flavor. When the fruit is not grown on healthy trees, it is liable to be spotted with black spots. This is one of the finest keeping apples, and is in eating from December to May—but is in the finest perfection in March.

Newtown Pippin, Yellow.

The Yellow Newtown Pippin strongly resembles the foregoing, and it is difficult to say which is the superior fruit. The Yellow is handsomer, and has a higher perfume than the Green, and its flesh is rather firmer, and equally high flavored; while the Green is more juicy, crisp and tender. The Yellow Newtown Pippin is rather flatter, measuring only about two inches deep, and it is always quite angular—projecting more on one side of the stalk than the other. When fully ripe, it is yellow, with a rather lively red cheek, and a smooth skin; few or none of the spots on the Green variety, but

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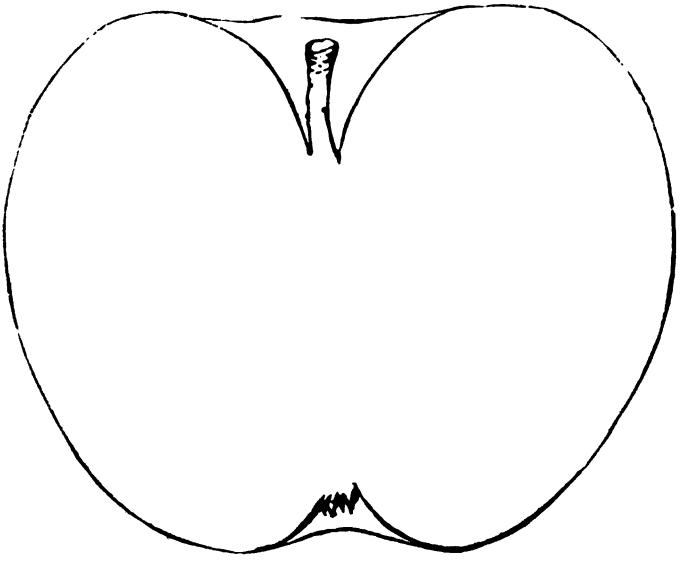

NORTHERN SPY.

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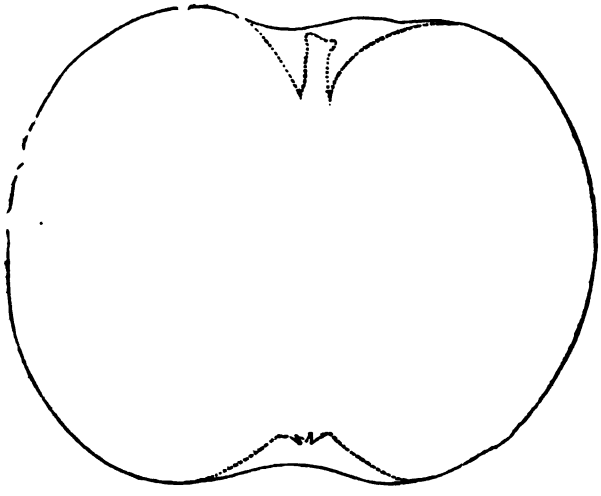

Newtown Pippin, Yellow.

with the same russet marks at the stalk. It is also more highly fragrant, before and after it is cut, than the Green. The flesh is firm, crisp, juicy, and with a very rich and high flavor. Both the Newtown pippins grow alike, and they are both excellent bearers. This variety is rather hardier and succeeds best in the Eastern States. We have kept the fruit until the 4th of July.

[It is remarked by some pomologists, who give their own experience and observation for the fact, that the Newtown Pippin does not thrive, nor bear well in Central, Northern and Western New-York. That the *local* experience of some is to that effect, we think highly probable. We do know, however, that remarkably fine specimens of this fruit are produced in Western New-York, although it is not *extensively* cultivated there as a market apple. In the Hudson river counties, including Washington and Saratoga, it is successfully and extensively cultivated for the market. Wherever it will flourish, it is worthy of all the encomiums it has received.]

Northern Spy.

A very large, handsome, and excellent, new native fruit, of the Spitzenburgh family, which has lately attracted a good deal of notice. It keeps remarkably well, is in eating from December to May, and commands the highest price. The tree is of rapid and upright growth, and bears well. It originated on the farm of Oliver

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Chapin, of Bloomfield, in Ontario county, N. Y., and is likely to become a very popular apple.

Fruit large, roundish-conical, obscurely ribbed. Skin smooth, the ground pale, or nearly white, in the shade, but when exposed nearly covered with light red marked with broken stripes of darker red, and sprinkled with a few pale dots. Stalk three-fourths of an inch long, rather slender, often rather fleshy at its base, planted in a wide deep cavity, usually russetted. Calyx small, closed, set in a narrow furrowed basin. Flesh white, juicy, crisp, with a lively, fresh and delicious flavor, slightly sub-acid.

[We shall be mistaken in our anticipations, if, when better known, the Northern Spy does not become one of the most desirable and popular of American apples, as much so as the Newtown Pippin, and Esopus Spitzenburgh. Mr. Downing errs in its early ripeness. It is seldom fit for eating till February, better in March, and will keep well till June. So powerful is its odor, that when fully ripe, a single apple laid upon a table will fill a well sized room with its fragrance. No apple can be more beautiful in its appearance.]

Pearmain Blue.

The Blue Pearmain is a large and a very showy fruit, and is therefore popular in New-England markets. The numerous large russetty yellow dots which are sprinkled over the skin, and the bloom which overspreads it, mark this apple.

Fruit of the largest size, roundish, regularly formed, very slightly conical. Skin covered with stripes and blotches of dark purplish-red, over a dull ground—and appearing bluish from the white bloom. Stalk short, slender, sunk in a deep hollow, rather uneven. Calyx small, pretty deeply sunk in an even basin. Flesh yellowish, mild, rather rich and good. The tree grows strongly, and bears moderate crops. October to February.

[Our experience differs from that of Mr. Downing; we have seen orchards of the Blue Permain, in New-England, loaded and bending to the ground with their fullness. It is a decidedly rich, heavy and valuable apple, both for the table and for cooking. From the locality of its origin, it should flourish well in the high latitudes of New York.]

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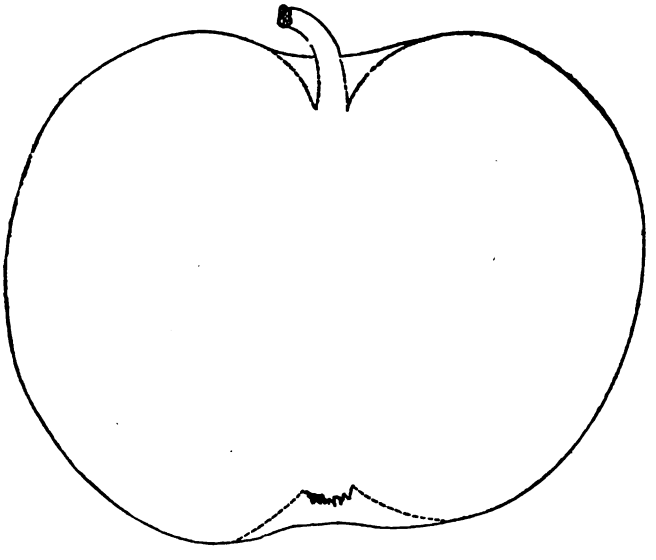
Rhode Island Greening.

The Rhode Island Greening is such an universal favorite, and is so generally known, that it seems almost superfluous to give a description of it. It succeeds well in almost all parts of the country, and on a great variety of soils, and is, perhaps, more generally esteemed than any other early winter fruit. In the Eastern States where the Newtown pippin does not attain full perfection, this apple takes its place—and in England, it is frequently sold for that fruit, which, however, it does not equal. [The *Green* Newtown Pippin described by Lindley, is this fruit.]



Rhode Island Greening.

Fruit large, roundish, a little flattened, pretty regular, but often obscurely ribbed. Skin oily smooth, dark green, becoming pale green when ripe, when it sometimes shows a dull blush near the stalk. Calyx small, woolly, closed, in a slightly sunk, scarcely plaited basin. Stalk three-fourths of an inch long, curved, thickest at the bottom. Flesh yellow, fine grained, tender, crisp, with an abundance of rich, slightly aromatic, lively, acid juice. The tree grows very strongly, and resembles the Fall Pippin in its wood and leaves, and bears most abundant crops. The fruit is as excellent for cooking, as for the dessert. November to February, or, in the north, to March.

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Russet, American Golden.

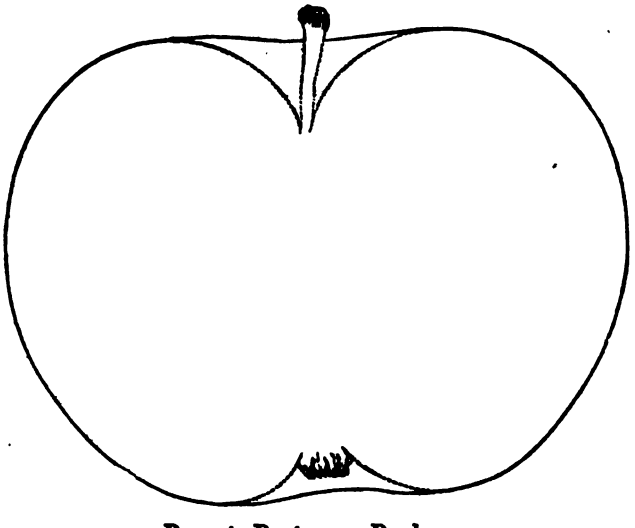
The American Golden Russet is one of the most delicious and tender apples; its flesh resembling more in texture that of a buttery pear, than that of an ordinary apple. It is widely cultivated at the west, and in New-England, as the Golden Russet, and though neither handsome, nor large, is still an universal favorite from its great productiveness and admirable flavor. The uncouth name of Coxe, *Sheep-nose*, is nearly obsolete, except in New-Jersey, and we therefore adopt the present one, to which it is well entitled. The tree is thrifty, with upright *drab* colored shoots.

Fruit below medium size, roundish-ovate. Skin dull yellow, sprinkled with a very thin russet. Stalk rather long and slender. Calyx closed, and set in a rather narrow basin. Flesh yellowish, very tender, (almost melting,) juicy, with a mild, rich, spicy flavor. October to January.

[In Western New-York, the American Golden Russet is oft times a large apple, and in shape somewhat like the Roxbury. To all the superiority of flavor assigned it by Mr. Downing, it there unites the quality of long keeping. We have often seen it in the Rochester and Buffalo markets in July, and even in August. It is one of the richest and best of American apples.]

Russet, Boston or Roxbury.

This Russet, a native of Massachusetts, is one of the most popu-



Russet, Boston or Roxbury.

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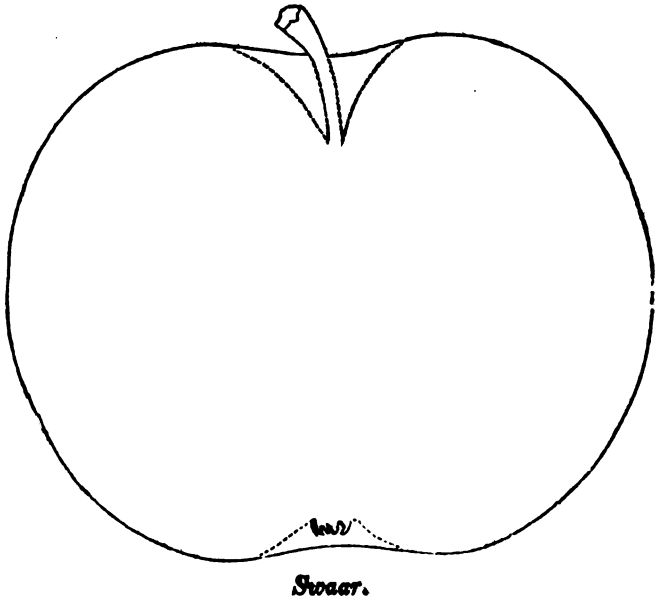
lar market fruits in the country, as it is excellent, a prodigious bearer, and keeps till late in the spring. It is in every way, highly deserving extensive cultivation.

Fruit of medium size, often large roundish, a little flattened, and slightly angular. Skin at first dull green, covered with brownish-yellow russet when ripe, with, rarely, a faint blush on one side. Stalk nearly three-fourths of an inch long, rather slender, not deeply inserted. Calyx closed, set in a round basin, of moderate depth. Flesh greenish-white, moderately juicy, with a rather rich, sub-acid flavor. Ripens in January, and may be brought to market in June.

There are several native varieties of Russet or "Leather Coats," of larger size than the foregoing, but they are much inferior, being apt to shrivel and become tasteless.

Swaar.

This is a truly noble American fruit, produced by the Dutch settlers on the Hudson, near Esopus, and so termed from its unusual weight, this word, in the Low Dutch, meaning *heavy*. It requires a deep, rich, sandy loam, to bring it to perfection, and, in its native soils, we have seen it twelve inches in circumference, and of a deep golden yellow color. It is one of the finest flavored apples in Ame-



Swaar.

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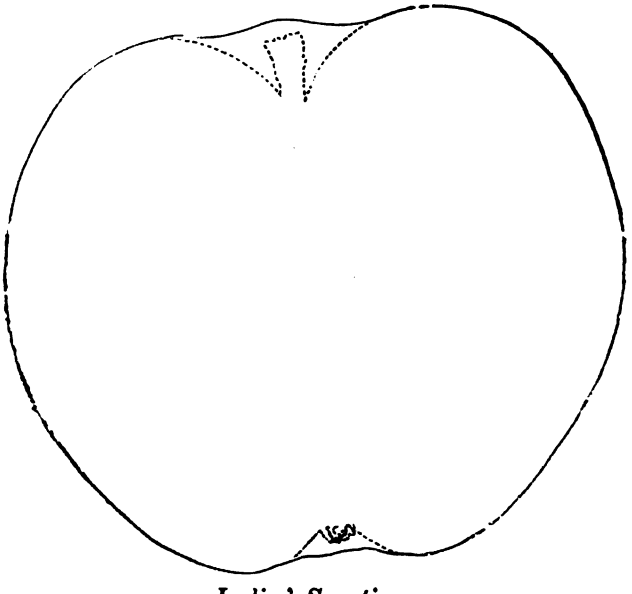
rica, and deserves extensive cultivation, in all favorable positions, though it does not succeed well in damp or cold soils.

Fruit large, regularly formed, roundish. Skin greenish-yellow when first gathered, but when entirely ripe, of a fine, dead gold color, dotted with numerous distinct brown specks, and sometimes faintly marbled with gray russet on the side, and round the stalk. Stalk slender, three-fourths of an inch long, inserted in a very round cavity. [Sometimes this cavity is partially closed.] Calyx small, greenish, set in a shallow basin; scarcely plaited. Flesh yellowish, fine grained, tender, with an exceedingly rich, aromatic flavor, and a spicy smell. Core small. The trees bear fair crops, and the fruit is in season from December to March.

[This apple, in Western New-York, is one of the longest keepers. We have seen the Swaar, side by side, perfectly sound, with the Golden Russet, in July.]

LADIES' SWEETING.

The Ladies' Sweeting we consider the finest winter sweet apple, for the dessert, yet known or cultivated in this country. Its handsome appearance, delightful perfume, sprightly flavor, and the long



Ladies' Sweeting.

time which it remains in perfection, render it universally admired wherever it is known, and no garden should be without it. It is a

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native of this neighborhood, and thousands of trees of this variety, have been sent from this [Mr. Downing's] garden, to various parts of the Union. The wood is not very strong, but it grows thriftily, and bears very abundantly.

Fruit large, roundish-ovate, narrowing pretty rapidly to the eye. Skin very smooth, nearly covered with red in the sun, but pale yellowish-green in the shade, with broken stripes of pale red. The red is sprinkled with well marked, yellowish-gray dots and when first gathered, covered with a thin white bloom. There is also generally a faint marbling of cloudy white over the red, on the shady side of the fruit, and rays of the same around the stalk Calyx quite small, set in a narrow, shallow, plaited basin. Stalk half an inch long, in a shallow cavity. Flesh greenish-white, exceedingly tender, juicy and crisp, with a delicious, sprightly, agreeably perfumed flavor. Keeps without shrivelling, or losing its flavor, till May.

Talman's Sweeting.

The Talman's Sweeting is scarcely second rate as a table fruit, but it is one of the most popular orchard sorts, from its great productiveness, its value as food for swine and cattle, as well as for baking. Form nearly globular. Skin, when fully ripe, whitish-yellow, with a soft blush on one side. Stalk rather long and slender, inclining to one side, and inserted in a rather wide, shallow, but regular cavity. Calyx set in a small basin, slightly depressed. Flesh quite white, rather firm, fine grained, with a rich, sweet flavor. November to April. This fruit, a native of Rhode Island, considerably resembles the Danver's Winter Sweet, of Massachusetts.

[We differ widely from Mr. Downing, in calling the Talman Sweeting a "scarcely second rate table fruit." It has a delicious, spicy, sweet flavor. For baking, there is no better apple in its season; and as a *profitable* fruit for domestic consumption, no winter apple can be superior. For the market, popular taste and demand must be consulted by the orchardist, and the extent to which they may be propagated must depend on the use to be made of them. But to the *home* consumer, we say, plant abundantly of the Talman Sweeting.]

Spitzenburgh, Esopus.

The Esopus Spitzenburgh is a handsome, truly delicious apple, and is generally considered, by all good judges, equal to the New-

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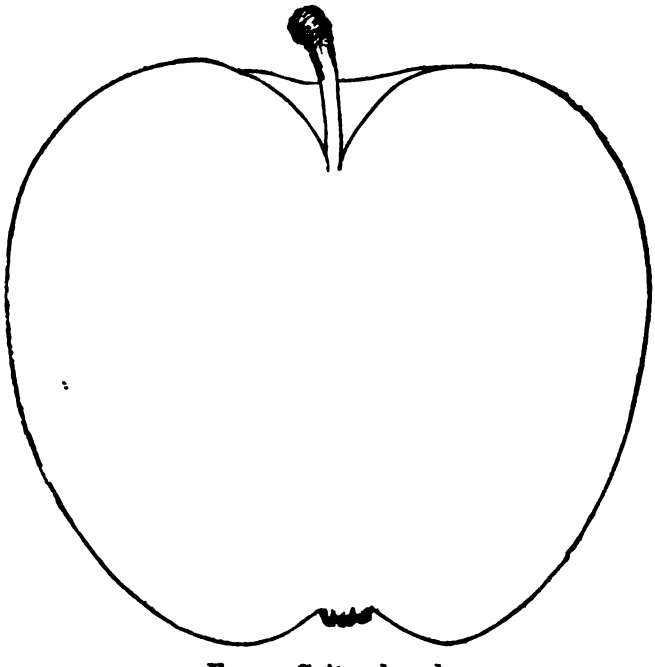
town Pippin, and as a dessert fruit, unsurpassed by any other variety. It originated at Esopus, a famous apple district, originally settled by the Low Dutch, on the Hudson, where it is still raised in its highest perfection. But throughout the whole of New-York, it is considered the first of apples, and its beauty and productiveness render it highly profitable for orchard culture. The fruit of this variety brought from Western New-York, seems deficient in flavor, which is, perhaps, owing to the excessive richness of the soil there. The tree has rather slender shoots, and when in bearing, has long and hanging limbs.



Esopus Spitzenburgh.

Fruit large, oblong, tapering roundly to the eye. Skin smooth, nearly covered with rich, lively red, dotted with distinct yellowish russet dots. On the shaded side, is a yellowish ground, with streaks and broken stripes of red. Stalk rather long, three-fourths of an inch, and slender, projecting beyond the base, and inserted in a wide cavity. Calyx small, and closed, set in a shallow basin, which is slightly furrowed. Flesh yellow, rather firm, crisp, juicy, with

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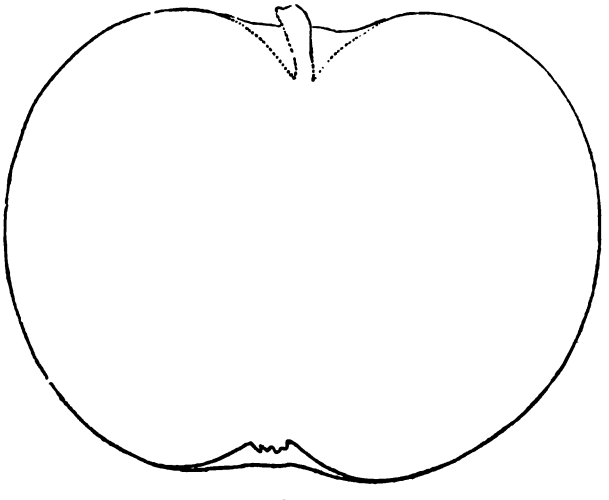
a delicious rich, brisk flávor. Seed in a hollow core. December to February.

[We fear that Mr. Downing's samples of this apple, obtained from "Western New-York," were not a fair representation. No fruit grows in greater perfection, nor with higher flavor there, than the Esopus Spitzenburgh. It is seen plentifully in the markets there till May.]

Vandervere.

The Vandervere, when in perfection, is one of the most beautiful and finest apples. But it requires a rich, light, sandy soil, as in a damp heavy soil, it is almost always liable to be spotted, unfair, and destitute of flavor. It is a native of Wilmington, Delaware, and took its name from a family there. It is a fine old variety, and is highly worthy of extensive cultivation, where the soil is favorable. We have before us some apples of this sort, which are exceedingly beautiful and excellent.



Vandervere.

Fruit of medium size, flat. Skin, in its ground color, yellow, streaked and stained with clouded red, but on the sunny side, deepening into rich red, dotted with light gray specks. Stalk short, inserted in a smooth, rather wide, cavity. Calyx small, closed, set in

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a regular well-formed basin, of moderate depth. Flesh yellow, crisp and tender, with a rich and sprightly juice. October to January.

[Although this apple may be, in some localities, obnoxious to the imperfection charged by Mr. Downing, the racy and delicious flavor of its flesh should not exclude it from cultivation in favorable soils. It is one of the very best apples for the table and for cooking. For "apple-butter," it is pre-eminent. By all means, cultivate a few Vanderveres.]

Waxen Apple.

The Waxen Apple, for whose correct history we are indebted to that careful pomologist, Professor Kirtland, of Cleveland, is esteemed in Ohio, where it is now most largely cultivated, one of the very finest of all early winter varieties. It was carried from eastern to western Virginia, by Neisley, a nurseryman on the banks of the Ohio, about the commencement of the present century. Thence it was introduced into Belmont county, and other parts of Ohio. From Rockport it was carried by C. Olmstead, Esq., to Boston, in 1834, incorrectly under the name of Belmont.

Fruit of middle size, globular, a little flattened and narrower towards the eye; sometimes oblong; when of the latter form, the eye is knobby. Stalk short. Skin pale yellow, rarely tinged with bright vermillion blush, waxy, or oily smooth. Flesh white, crisp, tender, sometimes almost melting, and of a mild, agreeable flavor. November to February.

[In addition to the great estimation in which this apple is deservedly held in Ohio, we think it would be equally popular in this State, were it as well known. In outward form and appearance, it is the *beau ideal* of its species. But when to its exceeding beauty, it adds the highest qualities for the dessert and for cooking, it will be cultivated wherever it is known. It is extensively grown for orchard culture in the neighborhood of Cleveland, Ohio, and has lately been introduced into the orchards and nurseries of Western New-York.]

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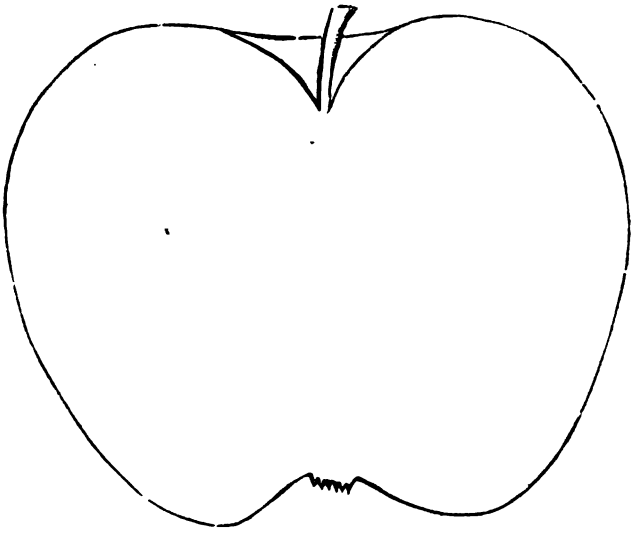

WESTFIELD SEEK-NO-FURTHER.

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Westfield Seek-no-further.

The *Westfield Seek-no-further* is the Seek-no-further of Connecticut, and is an old and highly esteemed variety of that district. It has a Pearmain flavor, and is much superior to the Green Seek-no-further. Fruit large, pretty regularly round. Skin pale, or dull red over a pale clouded green ground, the red sprinkled with obscure russety yellow dots. Stalk very slender, three-fourths of an inch long, inserted in an even cavity. Calyx closed, or with a few reflexed segments, and set in an even basin of moderate depth. Flesh white, fine grained, tender, with a rich, Pearmain flavor. A first rate fruit. October to February.

[This truly excellent apple originated in Westfield, or its neighborhood, a beautiful meadow town, about ten miles west of Springfield, in the Connecticut valley, in Massachusetts. For many miles up and down, and round about that river, it is *the* apple, *par excellence*, of that locality; as much so as is the Newtown Pippin on Long Island, or the Esopus Spitzenburgh in Ulster. Whole orchards are planted of this fruit, and no where does it flourish in higher luxuriance and perfection. It loves a warm, free soil; is hardy, vigorous and prolific. In flavor, it is excelled by few apples whatever for all household purposes. It flourishes well in this State, particularly in the western counties. Wherever it will grow, its cultivation is recommended, both for domestic and market purposes.]

Having thus disposed of this branch of their subject, it will hardly be expected, nor indeed is it necessary, that the undersigned should discuss the cultivation of the apple, when that branch of the subject is so well detailed in the valuable treatise from which they have just drawn so liberally, and in other writers of less volume and general circulation. In furtherance of the influence which the society may exert in encouraging this important branch of our agriculture, they recommend the dissemination of such works as Downing's "Fruits and Fruit Trees of America," and that excellent little hand-book, Thomas's "Fruit Culturist," by way of award on fruits at the annual exhibitions of the society, *in addition* to money premiums.

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In adddition to the subject of apples, your committee were charged with a report on the finer fruits cultivated in our State, and to recommend to the society such varieties of the same as they should think desirable to the public attention. This last branch of their duties they have been unable to perform for want of the necessary time which its examination requires; but they trust they may be enabled to do so in the course of the current year. The undersigned, therefore, ask further time to make such report, which they hope satisfactorily to do at the annual meeting of the society in 1848.

All which is respectfully submitted.

LEWIS F. ALLEN, of Erie.
SAMUEL YOUNG, of Saratoga.
HERMAN WENDELL, of Albany.

To BENJAMIN P. JOHNSON, Esq.,
Recording Secretary N. Y. State Agricultural Society.

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COMMUNICATIONS.

THE DOCTRINE OF SPECIAL MANURES.

By D. P. GARDNER, M. D., Honorary Consulting Chemist of the American Agricultural Association, New-York, &c.

My object in the following pages is, to bring before the agricultural world an account of the expensiveness and nature of farm yard manure, with some observations on the substitution of special manures. For this purpose I have thought it advisable to explain the action of yard manure and develop the doctrine of special composts. The subject is not unworthy of attention when we remember the economy necessary to be practiced by farmers on the worn lands of the seaboard and the competition of the fruitful west. I have divided the subject into sections for the convenience of reference.

Section 1. THE EXPENSE OF FARM YARD MANURE.

There are few farmers who adopt the plan of manuring to any extent, who have not been on mature reflection, somewhat surprised at the great expense they incur. When the cost of raising and storing the provender, of feeding out, of handling the manure, of carting to distant fields, of plowing, and in a great measure for the purpose of obtaining a fresh supply of provender, are duly considered the expense is by no means trifling. It is indeed urged that stock is necessary to the farmer, and that he finds it profitable to feed such well; but I am not considering the question whether a farm be so situated as to make it profitable to graze, or make cheese and butter, but the more simple question of the expensiveness of employing farm yard manure as is now done or amending the system. It is urged by British agriculturists, that a supply of neat cattle is an essential to good farming, and that the farmer should be content to gain the ma-

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nure only for his time, labor, provender and capital. The plan adopted under this recommendation consists in purchasing a number of Highland or Irish steers in the fall, when they are driven into England for the purpose, and maintaining them until spring, when they are sold in the neighboring markets to the butcher; and we are assured that if the animals sell for as much as they cost in the autumn the farmer is well paid for the heavy investment of capital in land and animals by the manure reserved. It is not denied that many make a profit of some kind besides, but this is the dictum of agricultural authors and unfortunately the experience of many worthy men. It is further considered that more than a third of the farm should be set aside for the purpose of supplying the hay, turnips, mangle wurzel or other necessary provender to carry out this scheme. Without desiring to push the expense to the highest figure, it is however useful to consider what may be the effect of this recommendation amongst us, allowing a fair amount of profit on the feeding. It is stated by residents of Dutchess county, in New-York, that it is a common practice to take up western cattle in the spring or during the early summer, graze them until fall and then send them to market. The cost of the animals averages $20 a head and they are sold at $30 each, in New-York market. On farms of 200 acres 100 head can be taken and this will pretty nearly exhaust the productive resources of the land.* Let us suppose that the animals exhaust the provender of the farm and the expense will be at 7 per cent. per annum,

Interest on land, worth $50 the acre,----------	$700 00
Interest on the investment for 6 months, 100 head at $20 each, ----------	70 00
Expenses of labor, 2 men and a boy 6 months, at $18 for each man and $10 for the boy,------	276 00
Expenses, ----------	$1,046 00

The profit on the cattle will be $1,000; the farmer does not therefore at this rate obtain a return of seven per cent. on his capital, in as much as he pays $276.00 for labor; and therefore if instead of farming, he made an investment of his money ($12,000) in bond and mortgage at 7 per cent. reserving his house, he would do much better than by this system. The numbers given above represent ve-

*The statement of Mr. Wyckoff at the Farmer's Club, New-York.

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ry nearly the condition of things, the only difference being that a small surface is in corn, grain, orchard and garden, which do not produce more than sufficient to maintain the stock used by the family and the vegetables and grain for the table. The manure dropped is left on the field and wasted very considerably from this cause, little is collected, and the whole broken and spread in the spring does no more than maintain the land in sufficient heart to produce the necessary crop for the next season. There is little doubt that this process is without economy, but it is extensively practiced ; and it is a subject of consideration whether it be not as profitable as any system in which the feature of feeding cattle for manure is introduced; to arrive at a fair conclusion on this subject we must omit all profits derivable from milk, cheese or calves, for in this case the stock is made a means of selling the crop as well as supplying manure and they will consume more food and be a more permanent portion of the investment. It is yet a question with practical men, who are within reach of a good market, whether corn or grain can be profitably turned into flesh and we are not disposed to entertain this matter but are merely drawing attention to the great expense farm yard manure.

Suppose however, that all the straw is economized on a partially arable farm and this is added to the yard, the other provender being derived from a third of the land ; will the operation be much more profitable? The number of head of stock kept will depend upon the condition of the grass land, which must be manured to keep up a fair yield, and little more than the straw will go back to the land from whence it came. The addition will unquestionably sustain the land in some degree but by no means to the extent imagined. We are in the habit of considering the successes of British agriculture without remembering two great points, that the farmers of that country expend annually for one article of manure, bones, derived from foreign countries the prodigious sum of $3,000,000 without considering the home supply; that guano, nitre, plaster, salt, and lime are employed at such rates as to become a still greater charge: and secondly, that the corn laws under which their agricultural prosperity was fostered was a premium of 53 cents a bushel for wheat, or upwards of $10 an acre, by which this system of manuring was paid. Had it not been for the mineral and foreign manure does any one believe that the agriculture of that country would have prospered? In Norfolk, a poor county originally, now one of the most fertile in England, it is the foreign manure much more than any other cause which has raised the farming. The contiguous port of Hull receiv-

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ed in 1835, 25,700 tons of foreign bones in the year. No extra stock is kept in Flanders to supply manure, but that economical people resort to the cities and to other expedients.

In the foregoing remarks my design has been more to induce our farmers to think upon the subject than to make an estimate of the cost of yard manure. The scene of my agricultural experience is not the State of New-York, but central Virginia and I cannot therefore speak with certainty, but rely upon the representations of others. The price of home made manure in this State in the river counties, is estimated at more than the cost in the city of New-York with carriage and handling; this becomes in Dutchess county equal to 62½ cents for the single horse load of about 25 bushels delivered at the wharf. It is customary to add twenty or more loads of this manure to the acre for corn at an expense, with labor, of nearly $20. If I am not correctly informed I trust the reader will proceed with me using his own calculations, but this estimate cannot be far from the truth when it is remembered that the greater part of our intelligent farmers shrink from the expense and have arrived at the conclusion that for a man of limited means, the exhaustion of the soil is the most profitable system of farming.

§ 2. *The nature of farm yard manure.*

Granting, that yard manure, however produced, costs when laid on the ground, a dollar a load of twenty-five bushels, I propose now to consider whether there be not some more economical means of manuring than at this rate. For the purpose of making myself better understood to those who have not devoted some time to chemical investigations, I shall first examine, in a familiar way, what farm yard manure is. For this purpose I make use of the accurate experiments of *M. Boussingault* a practical farmer and a celebrated chemist, fuller details are to be found in the *Farmer's Dictionary*, article "Farm yard manure." From these experiments it appears that 1,000 pounds of excellent manure, taken from a quantity made by 30 horses, as many oxen and twenty pigs, and carefully dried at a temperature little above the boiling point of water (230 Fh.) yielded but only 207 pounds of solid matter. That made in the summer but only 196 pounds in 1,000, all the rest being water. Therefore eighty per cent of this highly prized and superior manure is nothing more than *water*, not in any wise different from the fluid you sink drains to remove from the soil, which you hill and plow up the land into ridges to get rid of; a fluid, which however es-

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sential in small quantities, is the source of more than one-half of the failures in husbandry. A single horse load of 1,500 pounds for which a dollar is paid, contains 1,200 pounds of this fruitless addition and but 300 pounds of any kind of solid matter ; what the value of this may be, we will now proceed to examine.

§ 3. *The vegetable matter farm yard manure contains.*

Guided by the researches of *M. Boussingault,* than which nothing more perfect can be made, let us estimate for what the farmer is paying one dollar per load of 1,500 pounds. Of the solid matter of (300 pounds in this quantity) 210 pounds are vegetable matter or humus and 90 pounds are mineral matters presently to be examined. The 210 pounds of vegetable matter are of a composition closely analagous with straw—thus the straw consists per cent. of carbon 42.3, hydrogen 5.0, oxygen 36.7, nitrogen 1.9—the dung made therefrom, carbon 35.8, hydrogen 4.2, oxygen 25.8, nitrogen 2.0 both specimens being dried at 230 Fh. By the digestion and other functions of the animal nothing is gained in point of richness, but there is 6½ per cent. of carbon and nearly 11 per cent. of oxygen lost by respiration. Nothing is gained in riches because there is an excess of water over what existed in the food, and secondly, the proportion of nitrogen is the same in both the food and the manure. It may be proper to explain why I attach so much weight to this second fact. The value of animal and vegetable manure, when we leave out of consideration the mineral matters they contain, depends on the per centage of nitrogen. To this constituent the heating and valuable nature of horse manure is due ; if we feed well the manure becomes better only because it becomes more rich in nitrogen. This element must exist in whatever bodies undergo fermentation or putrefy, and the rapidity of the action is an accurate measure of the amount of nitrogen in organized substances. It is the most valuable component of urine, of blood, woolen rags, and the animal manures. As respects the plant it is a body which developes the germinating power, gives a start to the seedling, imparts vigor and rapid growth to the stem, expands the leaves, endows the flower with beauty and fills the seed with its most nutritive constituents. These results flow from nitrogen combined in organic manures, not that it is the only essential, but the chief ; that which, whilst it is incapable of developing the whole plant, is so essential that no grain of corn, or wheat could be formed without. The office that nitrogen performs in the vegetable economy is not now under consideration, but what I have stated can be readily proven; under these circumstances I

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may be allowed to estimate the value of the vegetable part of yard manure at the proportion of nitrogen it contains.

The nitrogen present in 1,000 pounds of well made and carefully kept manure from the above stock is only 4 pounds; and if the farmer neglects his heap and allows the urine to drain away it will be rapidly diminished. That industrious and practical man, *Dr. Carl Sprengel*, professor of agriculture in Brunswick, Hanover, examined the effect of exposing the urine of the cow to the weather for only six weeks, the experiment was conducted carefully and on a large scale (see *article urine, in the Farmer's Dictionary*) and the result was, that only 13 per cent of the whole nitrogen remained, 87 per cent. being lost into the air. In other words a cow yields in a year if we estimate the value of the urine when quite fresh, as much as 178 pounds of nitrogen, but if this be exposed for only 6 weeks in an open place and allowed to be acted on by the sun it will be diminished to the inconsiderable amount of 23½ pounds. This statement may be astonishing to those who have not considered the subject, but by a little reflection on the effects of putrefaction it will not appear so surprising. Now if the prudent husbandman were to add sufficient litter to his yard daily to absorb every portion of the urine and dung, he would but obtain a yard manure containing 6 pounds of nitrogen in the load of 1,500 pounds; and if as commonly occurs, he were to neglect in some degree the littering, it would immediately fall short of this, and we shall be liberal in allowing so much as 4 pounds to the load. Now 4 pounds of nitrogen in organic combination is exactly represented by 50 pounds of fresh bones; 20 to 40 pounds of guano, depending upon the excellence; 28 pounds of nitre; 22 pounds of Peruvian nitre worth 2½ cents per pound in quantity; 15 pounds of sal ammoniac (muriate of ammonia), or 50 pounds of the clippings of skins; 130 pounds of blood or flesh offal, or 25 pounds of waste wool, woolen rags, refuse hair, feathers, whalebone or horn shavings. This valuation is partly practical and partly theoretical, and is not to be taken as representing the cheapest substitutes, for any farmer can make the nitrate of lime in nitre beds on his farm and then the four pounds of nitrogen will be represented by 40 pounds of crsytallized nitrate of lime which can be made for a sum not exceeding 10 cents. That this substitute is perfectly efficacious is the evidence of a population of millions in India and lest any misconstruction should arise I copy the words of one of the best farmers of this age, Mr. Fleming of Barochan, Scotland, who resided for a long time in the country of which he speaks.

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"The districts of Chaprah, Tirhoot and Shabahad near Patna, where a large proportion of the saltpetre sent to Bengal is produced, are considered the most fertile in Bengal, *producing 2 and 3 crops yearly.* The natives of these districts, particularly a caste called Quirees (hereditary gardeners), who cultivate the best land, and produce the best crops, are in the habit of irrigating their fields with water from wells so strongly impregnated with saltpetre, and other salts as to be quite brackish, and they consider onions, turnips, and peas most benefitted by this irrigation. Grain crops also grow most luxuriantly on lands yielding saltpetre, where there is enough rain within a week or two after the seed is sown, but if a drought follows the sowing, and continues for three weeks or a month, the leaf becomes yellow and the crop fails" This would occur under any circumstances in so hot a climate. "The Hindoos do not commonly manure their land with cow dung, as it is used for fuel; but the Quirees collect the ashes of dung and also of wood and use it as a manure in some cases, especially for the poppy plant. The Hindoos have for ages been acquainted with the rotation of crops, and the advantages of fallowing land, although a great proportion of the land is almost constantly in rice, *Indian corn* or millet during the rainy season, and in *wheat* or *peas* during the dry season."

I have been tempted to extend the quotation that the reader may not set aside my evidence too slightingly. We hear of Hindoos as barbarians and pagans, as a miserable kind of slaves, docile to a proverb and hence think of them with contempt. Our religious views, and the proud consciousness of the highest personal liberty, impede our understanding and justice in this matter. The Hindoos are a people with whom have originated the most sublime sciences and mental conceptions. The most abstruse problems of astronomy, the finest theorems of physical mathematics have been developed by this race at a period so remote in the history of the world, that had they not been the first who practiced the art of writing, no trace of such honors would now remain. The Mohammedan and Tartar have humbled the spirit of the Hindoo but he is to this day the same intellectual creature when opportunities serve, and it is a source of some gratification to me that I have the means through the foregoing extract to show that he is the most philosophical and successful agriculturist of the present or of any age. This people burn the dung which you so much prize and care little for the ashes; the Egyptians also, their descendants, and amongst the best farmers of ancient or modern times, also burn the dung of their domestic animals.

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The remainder of the 210 pounds of vegetable or organic matter is partially decomposed hay or straw in the form of humus. I am sensible that many theorists from the time of Saussure and Boullay have considered humus as the essential food of plants. Ingenious schemes have been drawn up to show that soluble humus entered into the plant and by taking up a little oxygen was straightway converted into sugar and gum and every thing besides. Even in this day a few imitators of these exploded speculations survive, who recommend the farmer to boil peat with soda ash and manure his plants with the solution. But these notions are founded in error and such practices are without economy. When the great Saussure wrote it was not known that plants contained nitrogen and sulphur and phosphorus, their most important components and therefore neither he nor his imitators were prepared to draw out a theory of the nutrition of vegetables. The proportion of vegetable matter or humus in a soil has no reference to its fertility, some of the richest containing none and many of the poorest a great excess. On what is the practice of paring and burning founded? Does not the judicious man who desires to cultivate a drained peat soil add heavy doses of lime, of marl or even of clay and sand? But even if from your experience you are not induced to believe that the 204 pounds of imperfect humus are of little moment, will it not be cheaper to take an equivalent quantity from a peat bog in your neighborhood rather than encounter the expense of purchasing 1,500 pounds of yard manure to obtain it, or on the other hand undertaking great labor and an indefinite expenditure in making it at home. Or if your soil requires humus why not plow in a long stuble, or turn in buckwheat, fall oats, clover or make a green fallow? it will be much cheaper than paying $20 an acre for yard manure.

§ 4. *Of the mineral portion of farm yard manure.*

We now come to the consideration of the remaining 90 pounds of solid mineral matter obtained by burning 1,500 pounds of farm yard manure. The composition of this will depend upon the provender, therefore we will allow the animals to be fed on the finest hay. One hundred pounds of the ash of fine hay yield according to Sprengel,

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Potash and soda,	24.0	pounds.
Lime and magnesia,	16.0	do
Sulphuric acid,	5.5	do
Phosphoric acid,	0.5	do
Sand, carbonic acid and other unimportant bodies,	54.0	do
	100.0	

Therefore 54 per cent. of the 90 pounds of animal matter in the load will be sand and substances in no way important or valuable. There will be 24 pounds of potash and soda, quantities accurately represented by 100 pounds of unleached ashes from the maple, hickory, oak or chestnut. Sixteen pounds of lime and magnesia are to be had by taking about double that weight of air slaked lime. The sulphuric acid, existing in the grass as sulphate of lime or gypsum, is accurately represented by 16 pounds of ground plaster. All the phosphoric acid found in the ash by Sprengel is only equal to two pounds of bones. According to these valuations the ashes of a load of farm yard manure of 1,500 pounds are represented by

1 bushel of ashes,	worth,		12½	cents.
30 lbs. of air slaked lime	do	less than,	1¼	do
16 lbs. of plaster,	do	do	¼	do
2 lbs. of bones,	do	do	½	do
Worth less than,			14¼	cents.

The value does not exceed 12½ cents in truth for there are more of the above quantities in most kinds of wood ashes. None of these bodies can be shown to have more activity in the form of manure ashes, than in any other mixture, or in wood ashes. I do not undertake to advise any body to burn their manure for the ashes and do not wish to be understood as hinting at any such practice, but only that the ash of farm yard dung is nothing more nor less than the ashes of the straw used for litter and of the provender. The effects are in no way dissimilar. However derived, the lime, potash, bone earth and gypsum are slowly dissolved in the rain water which falls on the soil and enter plants serving many important offices therein. Without this supply the stem would want strength, the leaf lack consistency and the grain imperfectly mature. Sea shore sand is barren

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only when it contains none of these essential and soluble minerals, but when they are added even in minute quantities it becomes fertile. The best fields of Flanders were but a few years since moving sands: the natives of Peru raise the best crops of Indian corn on the shifting sands of the sea shore—and in both cases by the agency of mineral matters chiefly, for the former burn the straw of the rape plant for manure and the latter use guano which contains 70 or 80 per cent of mineral bodies.

If any thing more be wanted to convince the farmer that the mineral parts of yard manure are accurately represented in effect by the ash of the litter and provender, we would refer him to those admirable reports on the agriculture of England, made by direction of the Board of Agriculture. This work is a standard with us both by reason of the able men who put it together and the test it has sustained of forty years approval. Turn to the report of the survey of Lincolnshire, by Arthur Young, one of the best agricultural counties in Britain, and you will find that, "On the wolds of Lincolnshire (chiefly calcareous) the practice of burning the straw of threshed grain has been carried in many cases to the extent of four to six loads per acre and has been attended in all these cases with very decidedly good effects. *It has even been found superior in some comparative trials to yard dung, in the respective rate of five tons of straw (burnt) to ten tons of manure.*" Here is the experience of a large group of farmers detailed by the acute Arthur Young—farmers celebrated for their skill and success. Nor is it in the Lincolnshire report only but in the east riding of Yorkshire and elsewhere that similar results have been for years obtained. After this amount of satisfactory evidence it is scarcely worth while to search for more; but if any thing be wanting I would refer to the experience of the farmers of Connecticut and elsewhere who depend mainly on wood ashes for manure. My own experience is sufficiently favorable, for the only manure which I employed for five years in the garden was leached ashes and the results surpassed anything which the neighbors using stable manure obtained.

§ 5. *Summary of these results.*

From the foregoing we believe that it is fair to estimate a load of yard manure of 1,500 lbs., as being accurately represented by 1,200 lbs. of common water; 40 lbs. of home made nitre (nitrate of lime;) and a bushel of oak ashes, or their equivalents. On the substitute for the nitrogen, my position may be further fortified, by the

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experience of the Scotch and English farmers, who estimate 1 cwt. of guano as equal to 5 tons of 20 cwt. each of first rate farm yard manure. In this estimate for farm yard manure, the 1,200 pounds of water constitute the great draw back, this quantity gives bulk and enhances the expense at all steps, nor is it at all essential to the effect. From what has gone before, the reader will be prepared to admit that the ashes and a proper substitute for the nitrogen, will effect the same, or better results on the soil. If this be the case, why do farmers still encounter the heavy charge of a dollar a load for the use of yard manure, when they have better substitutes within reach for less than a quarter of that sum?

I have not taken up this subject without thought, but after the reflection of many years; and the result of that deliberation is, that the principal reasons why the present admiration and almost exclusive use of yard manure obtains, is a consequence of several circumstances which I shall endeavor briefly to explain.

Firstly, It is commonly home made, is more or less connected with the ordinary farm expenses, and have been longest and most universally recommended by practical men.

Secondly, It is only within a few years that any accurate researches have been made to ascertain its composition, and comparative effects; and these researches are for the most part unknown to the agricultural community.

Thirdly, There is a certain indefinite respect paid by nearly all agricultural men and writers to the process of fermentation, which is considered the great dependence of the farmer.

Fourthly, The facility with which farm yard manure can be obtained, and the certainty of its action, have made the farmer less attentive to its great expense, and the existence of substitutes, than he would otherwise have been.

These considerations are quite sufficient to account for a persistence in any error, however expensive, they explain themselves, and are not worthy of further examination, except as respects the action of fermentation, and the uniform success of this manure.

§ 6. *Of the fermentation of yard manure.*

The fermentation of yard manure is in no way different from that which occurs in other forms of organic matter placed under similar

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circumstances. The process is indeed a peculiar form of chemical decomposition or molecular change, by which the elements present, take on new combinations of a more permanent character. Water, carbonic acid and ammonia, are the principal resultants of this change; whilst heat is an incident. Practical men are altogether carried away by this phenomenon, regarding it as something occult, and beyond any solution of science, whilst indeed it is a process so simple and manageable, that the most ignorant may be taught in a few minutes to control or modify it. So far as I can make out the origin of the peculiar respect of farmers for yard manure, it seems to depend on this mysterious change. I think that judge Buel and many others, have assisted to engraft on agriculture a sentiment to the effect, that "fermentation is the sheet anchor of the farmer." How far preconceived ideas and a want of knowledge of the process of fermentation have influenced these writers, will appear from the following considerations.

The agricultural world has been shaken by the contentions of those who advocated the use of long manure, and those, who denouncing this practice, have set their dependence on short or well rotted manure. Both these partizans have placed implicit confidence in the action of fermentation; but one set have in truth recommended such manure as was undergoing this change, whilst the latter prefer dung (well rotted,) which has long ceased to be in a state of fermentation. So that whilst in their essays they have denounced anything but fermentation, they have uniformly used manure not undergoing this change. So soon as the dung hill ceases to give out considerable heat, fermentation has stopped, and every practical man knows, that in six, ten, or twelve months, when the manure is thoroughly broken and short, there is no shade of heat in it. Other excellent farmers who have nailed on their standards the dogma of "*fermentation*," practice and recommend plans for the management of manure in which fermentation is completely arrested. This is the result when yard manure is composted with lime. In nearly all forms of compost into which lime, salt, or ashes are introduced, fermentation is made impossible, and yet every body knows that this is a common practice.

The contrary position, that fermentation has nothing to do with the success of yard manure, is much more susceptible of proof. Not only are the preceding remarks calculated to show this, but numerous other considerations establish the same point. But whatever may be the condition of the manure whilst in heap, writers have,

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without exception, failed to consider the effect of scattering it over the land, and mixing with the soil. The moment the manure is so disposed, it is put in contact with air, over a large surface, and when plowed into a well drained mellow soil, the surface of contact is further extended. The effect of this is to stop fermentation, and induce the very dissimilar change of eremacausis. The tyro in chemistry knows this truth. What then is the origin of the loud controversy about long and short dung; in truth, nothing but ignorance, if the process of fermentation entered into the heads of the combatants as the great object of either. But we are told that certain forms of dung are hot and others cold and therefore the former are suited to cold soils, &c. This notion has so much weight with many, that I cannot pass it by without notice; but it is indeed not worthy of discussion. The amount of heat given out by two parcels of manure in a given time, depends upon the rapidity of fermentation, and this upon the degree of dryness, or amount of animal matter present in either parcel. If the amount of animal matter in a parcel of cow dung be the same as that in a similar pile of horse dung, they will both yield the same number of degrees of heat; if they are both wetted to the same degree, they will give it out in the same length of time, but if either be wetter, that will take the longest time. Horse manure being drier than cow dung, ferments more rapidly in heap, but spread it on the soil and place it under all circumstances in the same position as cow dung, especially when the animals are similarly fed, and the difference vanishes. In turning them into the soil they are placed in circumstances nearly similar.

If however the practical man still adheres to the position that it is the condition of fermentation which is the source of the excellence of yard manure, there is no difficulty in discovering substitutes much less expensive. I allude to this position, because the idea of the mysterious influence of fermentation has so completely enthralled the minds of many agriculturists, that there is little hope of disentangling the subject by mere argumentation. One of the most eminent men of this school has recently dilated to some extent on the subject of applying *yeast* to the soil, as an universal manure. Masses of leaves enter into a state of fermentation precisely analagous to that of yard manure. Straw kept moist does the same, especially if watered with putrescent ditch water or urine. Green weeds thrown together with peat and kept moist rapidly ferment. Spent tanners bark undergoes the same change. Litter of any kind kept moist, or made to surround fish, dead animals, or similar substances, rapidly ferment. One part of dung to three of peat, straw, or other waste

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vegetable matter, kept moist will throw the whole into fermentation. Many other plans might be described, but I trust the farmer will be satisfied at all events, that there is nothing mystical in the act of fermentation; and that it is very questionable, whether it can take place in the soil, or be in any way advantageous to his crop.

§ 7. *Of the uniform success of farm yard manure.*

In no good experiment has it ever been found that farm yard manure failed to advance the crop, it has defects, but this is not one of them. When however, the land is already well dunged, or very rich, its effects are much less apparent, indeed the largest crops have in every case been raised by other means. Lime, bones, ashes, plaster, salt, charcoal, nitre, and other manures, have each yielded immense crops on particular occasions, far outrivaling anything that common manure yields; but they are not certain in their effects. In the same way a marling, claying, burnt clay, drainage, subsoiling, deep plowing are often attended with marvellous effects; but to adopt these practices with any expectation of success, requires mature judgment, and a heavy outlay. Yard manure does not yield very large crops by itself; when assisted by good tillage and other means it has done so, but alone it will not give in any case extraordinary returns. There are good reasons both for its uniform and limited success.

On a grain or hay farm, especially if it be remote from market, the straw or hay goes to the stock, and by them is converted into manure. I have already given a history of the ashes of hay, they centain every mineral component of the next crop of grass; so the ashes of any other kind of provender yield the mineral substances necessary to feed the future crop of the same plants. There is indeed a loss, inasmuch as the animals appropriate a considerable amount, and of the most important portion, to their substance and growth. The minerals are the same, but the proportions are not the same. Now if we regard the efficacy of the manure as depending in part on these minerals, it is evident that the grass or grain will be benefitted to some extent by finding in the soil an increased quantity of every mineral it requires. So far the manure, by enlarging the proportion of mineral matter fitted for the food of plants, secures an increase of crop; but this increase is within narrow limits, because the minerals added in manure are of sparing solubility, and are not in the full proportion required by the plants. The hay has been fed to growing animals, which have appropriated nearly all the bone

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earth it originally contained, for the making of bone, this is necessarily lost to the manure. Instead therefore of adding to the meadow one hundred pounds of bone which might be required for a large crop, perhaps twenty pounds only go in the manure, any deficiency must be drawn from the soil, and this being a scarce and very insoluble body, the grass cannot obtain a sufficiency from this source. Now had a special manure containing a large quantity of soluble bone earth been put on this soil, the crop might have been doubled or trebled thereby.

In the case of every other plant, the same truth obtains. Each crop evinces some partiality for mineral substances, or for forms of nitrogen, none of these are in great excess in yard manure, but all are present; hence the crop will be certainly increased, whilst it can scarcely be inordinately great. When lime and other simple amendments which contain only one kind of plant food have brought about extraordinary results, it has arisen either from a want of the substance in the soil, a peculiar partiality of the crop therefore, or some collateral action. Mature deliberation is therefore necessary when a simple manure is employed to secure any result, or to guard against the possibility of doing the soil an injury. No empirical rules can cover this case, but when success is attained it is often immense and permanent.

We cannot overcome this objection to farm yard manure by increasing the dose, whilst there are other reasons against the attempt. Ask under what circumstances smut and rust attack grain crops; it will be discovered that this occurs chiefly on lands heavily dunged. On the sea coast, and where mineral manures are largely employed, smut and similar fungoid diseases are rare. The farmers of Cheshire have for years used little manure besides their native salt, to guard against the rust which had taken possession of their meadows. This is not the only cause of rust, but most certainly one of the chief. Another consequence of inordinate dunging is the laying of grain; the young plants run up so rapidly that they do not become sufficiently strong to bear the ears, and therefore fall, and the crop is lost or much injured. This effect is also seen on lands in timothy grass, and is sufficiently familiar. In the third place, the use of yard manure is additionally expensive to the farmer from the weeds it engenders. Where long dung is employed in quantity, the amount of weeds produced renders it almost impossible to grow plants broadcast, the effect being a less crop than if no manure had been used. This difficulty is in a measure removed by employing short dung;

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but then all the fancied benefits of the act of fermentation must be given up, as well the effects of most of the nitrogen and the soluble salts of the dung and litter.

§ 8. THE DOCTRINE OF SPECIAL MANURES.

If then yard manure be so expensive, and of such simple composition; if the process of fermentation be not an extraordinary and occult thing, and this manure is incapable of yielding very large crops when used alone, why should the farmer employ it almost exclusively? There is obviously no reason, but a want of examination and experience in the matter. There is no difficulty in putting together a compost, costing less than a fourth, which will fulfill every indication of yard manure, nor is the thing untried; but to do it successfully requires an amount of information in chemistry which practical men seem indisposed to acquire. For less than the cost and labor of one improvident manuring this might be attained.

But much more is to be attained than imitating yard manure, which, as we have shown, is not an extraordinary compound. Some waste of ashes or nitrogen must be encountered as it is prepared, and this waste renders it an inferior representative of the provender from which it was formed; whereas the *basis of a special manure* is an accurate representation of the mineral parts and nitrogen of the plant to be developed. If the object be to increase the crop of corn or wheat beyond what good tillage and a fertile soil will produce, a compost is to be put together, consisting of the articles of nutriment calculated for these plants, and this is made by the examination of the ashes and nitrogen of the particular plant. *The doctrine of special manures* is therefore founded on the principle, that as every plant requires particular kinds of food, the proper way to manure with economy and science, is to add to each the substances it requires, and not any indefinite compost.

To be still more explicit, it is necessary in practice to provide that the soil be in good tilth, and that it contain every necessary ingredient calculated to ensure fertility; without these conditions, the question of the expediency of special manures can never be properly tested. I explain this doctrine not to urge its infallibility, but to set an important theory before the agricultura world, and induce practical men to think on the subject. If the doctrine be found correct in practice, it will work a great reform in farming, by enabling us not only to manure at a trifling rate as compared with the pres-

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ent expensive means, but by making it a possible thing to raise the same crop on a piece of land without rotation; by removing the necessity for large farms, and expensive fixtures for stock; by enlarging crops beyond any point they have hitherto reached, and lastly by making agriculture much more a science of skill and intellectual expedients than manual labor. Such are the promises this doctrine holds out to the enlightened farmer; but before he can be expected to entertain a subject so novel, so serious, and so opposed to pre-conceived ideas, it is necessary to state in a few words the evidence on which it is founded. This may be grouped under two heads, 1st the experience of farmers, 2d, the uniform composition of the ashes of plants.

§ 9. *Of the experience of farmers.*

Farmers have never employed special composts but they have arrived at certain conclusions with respect to the simple manures, which are very interesting when examined in a philosophical manner. It has been found by experience that particular manures advance some crops and are unimportant in other cases. There is no better established fact in agriculture than that plaster (sulphate of lime) is of great service to clover, lucern and leguminous crops generally. Sir Humphrey Davy explained nearly fifty years ago, that the cause of this remarkable effect arose from the presence of the sulphate of lime in the ashes of such plants. The whole of this family produce a large quantity of casein or legumen which contains more sulphur than any other nutritious vegetable substance. Here is a dirict evidence of the theory of special manures. It is equally well established that potatoes are much improved by lime, that grass flourishes when manured with ashes, that the turnip can be raised only in large quantities by means of bone earth. Such facts, which can be multiplied to a considerable extent make it certain that a system of manuring, predicated on the ashes of plants has hitherto proved highly successful. There are indeed many apparent exceptions, thus gypsum ceases to improve clover after a time, or again it may altogether fail when first tried, but in both cases the result is due to the fact that the soil did not require any gypsum or that from its sterility this salt was not enough by itself. M. M. Boussingault, Goeppert, Lampadius, Davy and others have made it a matter beyond controversy that if any essential food were absent in the soil the plant would not grow to perfection. In the case of nitrogen this subject has been ably and fully investigated by Boussingault. Indeed the introduc-

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tion of special manures is but an extension of approved measures and a grouping of scattered statements under a scientific practice.

§ 10. *Of the uniform compositon of the ashes of plants.*

In applying the theory of special manures to practice, or in other words, before we can expect certain results from the use of special composts, it is necessary to be perfectly assured of the uniform composition of the ash of plants. To those who have not made a particular study of this point there does not appear any such uniformity but when the subject is accurately investigated an entirely different conclusion will be reached. The origin of this confusion is due to several causes.

First. An analysis of the ash of plants being somewhat intricate requires more skill than many who have published their results have possessed, hence some of these exminations are in error.

Second. Varieties have been overlooked by nearly every investigator, and although they do not appear to change the mineral substances, they certainly do alter the proportions of the less important bodies.

Third. In the examination of any analysis, the components have not the same importance, but some are of great moment and others in a mesure adventitious, thus phosphoric acid and in many cases sulphuric acid are essential bodies whilst silica, alumina, iron and manganese are mostly unimportant.

Fourth. It has been clearly proved that the isomorphism which obtains in minerals is also apparent in vegetables, hence soda and potash, lime and magnesia are in a measure capable of being substituted for one another, the substitution does not however always take place without injury to the sensible qualites of the plant.

These facts with others of less moment make it a close study to decide upon the subject, but there is conclusive evidence to assist us. Berthier collected specimens of tobacco from Virginia, Maryland, Havanna, the north and south of France, and Alsace and found in the ashes of each the same per centage of the salts of potash and other bases. In this case the operator was sufficiently skillful, and every specimen was submitted to the same scrutiny. Sprengel after analyzing wheat grain from numerous localities declared the ash precisely alike. Specimens of wheat grain examined in France by Boussingault, in

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Holland by Bichon, from Stolz by Thon, and in Germany by Fresenius, and Will, show a composition almost exactly the same—to adduce the most important body, these different chemists found the phosphoric acid in 100 parts of ash as follows : 49.3, 49.2, 48.3, 46.1. These researches were conducted in places very far apart without any concert and at intervals of several years. In the case of field peas these authorities obtained, of the same mineral body per cent 34.5, 34.5, 34.0, 31 0. In neither of these cases were the varieties the same. Professor Lampadius sowed wheat in five different soils—clay, lime stone, sand, magnesia and a mixed soil—and all the plants yielded similar ashes.

If this amount of evidence be not conclusive I shall despair of convincing the reader by any more instances. There is in truth no doubt that in the hands of well informed and skillful operators the ash will be found similar, but there are as many pretenders to chemistry as in medicine and other arts, and these make up in noise what they want in knowledge.

Conclusion.—The basis upon which the doctrine of special manures rests is unquestionably firm and perfect, but there are still some facts wanted to enable practical men to adopt it. That some crops require lime, others soda, others potash, sulphuric acid, phosphoric acid, &c., is beyond dispute. Equally apparent is the truth that to give every manure to such plants is inexpedient and wasteful. The difficulty rests in two points—the possibility of making proper special composts at a reasonable rate, and a want of experience with such mixtures. On the first point I can speak confidently. Manures exactly resembling the ashes of any vegetable can be obtained at a cheap rate, and composts made containing the same ingredients and in a more soluble and advantageous condition, for vegetation, at a trifling cost as compared with good yard manure. To do this it is necessary the farmer should make the necessary substances for himself, as many are not in the market and all that are so sell at exhorbitant rates as compared with the price at which they may be made. To attempt any detail of this art would be fruitless, the manufactures are sufficiently simple, requiring little or no fixtures and inexpensive but they do require chemical knowledge, and I should utterly fail to explain them without using much technical language and far exceeding the space of an essay. In the year 1843 the State Agricultural Society offered a premium, for an essay on the application

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of science to agriculture. For this premium and in consequence of the prominence given to any work under such auspices I put together a book of some 200 pages for the purpose of explaining all that was necessary to a full understanding of the art of making special manures, with the knowledge requisite for forming the ingredients on the farm, and a set of composts for corn, wheat, grass, beans and other crops. The manuscript was withdrawn from the action of the committee. It remains in my keeping but the little interest taken in the introduction of science into agriculture renders it probable that the publication would involve me in unnecessary expense. I adduce this item of history to show that three years ago the entire subject was discussed by me and that therefore I am warranted in asserting that all the composts could be made on the farm at a small expense. The work is still at the disposal of the society and therefore if any interest be attached to the subject they can examine the evidence on which I have reached this conclusion.

If the foregoing remarks shall arouse the attention of our intelliget farmers, if they shall shake the confidence placed in the foul and expensive manure so long employed, if they shall lead some to investigate the value of a knowledge of practical chemistry in the art of agriculture, the writer will be conscious of having expended his labor usefully, and having contributed something to the advance of agriculture.

412 *Fourth st., N. Y. March 10th*, 1847.

NOTE.—The priciples advocated and very ably supported in the preceding communication, will probably strike the minds of most of our farmers as new. The estimate which is placed on farm yard manure, is very different, both as regards its *expense* and *value* from what has generally been supposed. The subject is one of importance, and deserves investigation, and it is presumed there are those who have given attention to it, who will be prepared to give their views, and the results of their experience, and thus aid in arriving at correct conclusions.

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THE IMPROVEMENT OF THE PLOW IN THE UNITED STATES.

BY A. B. ALLEN.

I beg to apologize for the following crude article, it having been written on the spur of the moment, and in the midst of exacting business, at the particular request of the publishing committee. To describe the plow with all its various modifications, and give the history of its improvement, would require a volume, and more leisure for its composition than I can at present command. I hope what little I have written may have the effect of enlisting some more able pen on this interesting subject, and one that will treat it with the completeness which its importance justly merits.

Although the Dutch and Flemish made considerable improvement in the plow as early as the sixteenth century, and their example was followed up by the Scotch and English, bringing it to a high state of perfection, in Blythe's Rotherham plow, as early as 1730, I cannot learn that it received any attention on the part of American mechanics, with a view of its improvement, till after the close of the Revolution. Indeed, till quite recently, the plows in general use throughout the United States were extremely rude and highly primitive in their construction. A winding tree was cut down, and a mould board hewed from it with the grain of the timber running as nearly along its shape as it could well be obtained. On to this mould-board, to prevent its wearing out too rapidly, were nailed the blades of an old hoe, thin straps of iron, or worn-out horse-shoes. The land-side was of wood, its base and side shod with thin plates of iron. The share was of iron with a hardened steel point. The coulter was tolerably well made of iron, steel-edged, and locked in-

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to the share nearly as it does in the improved lock-coulter plow of the present day. The beam was usually a straight stick. The handles, like the mould-board, split from the crooked trunk of a tree, or as often cut from its branches: the crooked roots of the white-ash were the most favorite timber for plow handles in the Northern States. The beam was set at any pitch that fancy might dictate, with the handles fastened on almost at right angles with it, thus leaving the plowman little control over his implement, which did its work in a very slow and most imperfect manner.

It will be proper to give some account of the improvement made in plows in England and Scotland, before proceeding to the consideration of the improvement in America.

James Small, a Scotchman, constructed a plow on true mechanical principles, and was the inventor of the cast iron mould-board for it as early as the year 1740. He was extensively engaged in the manufactory of plows and other agricultural implements in Berwickshire, Scotland, for a great number of years. His plows are still considered as a standard for the elements of good plow-making, notwithstanding the improvements since his death up to the present day.

The basis of Small's improved plow was the Rotherham plow, which had been quite generally adopted. His improvement consisted in the better form of the mould-board and *particularly* in making it of *cast iron*. His plow, rendered cheaper by the easier construction and the greater certainty of the regular form of the mould-board, obtained a general use in all the north of England and in Scotland. In its turn Small's plow became the basis of the improved Scotch plow, so widely known and used now in both England and Scotland.

From the year 1740, when Small first introduced the cast iron mould-board, there seems to be no evidence that any other part of the plow was made of cast iron until the year 1785, when Robert Ransome, of Ipswich, England introduced the *cast iron* share. This was an improvement of vast importance and was soon followed by hers. From the facility and economy with which parts requi-

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ring nicety and uniformity in their form can be made and multiplied to any extent when cast, cast iron superseded wrought iron wholly in the plow.

The next improvement in the cast iron parts following Ransome's cast iron share, was made by a plian farmer in Suffolk county, England. It consisted in making the bottom of the land side of cast iron. This was immediately followed by making the whole of the land side of cast iron, and soon after the first introduction of the cast iron share, plows were produced of cast iron in all parts of their bodies.

Thus about the year 1790 the plow in England was perfected to the point that it was made entirely, in its body, of cast iron.

A single improvement yet remained to be effected, viz: a greater hardness in the share; and this was made by Robert Ransome who in 1803 took out a patent for *case-hardening*, or what we term, *chilling* the points and edges of the share. When in England, in 1841, I became acquainted with his son and successor in business, Mr. Allen Ransome, in whose admirable work on plows and agricultural implements, the curious reader will find full particulars in regard to this interesting subject.

It will thus be seen that the *cast iron* plow is wholly an English invention.

The first person in America, of whom I find any record as having taken up the plow with a view of its scientific improvement, was Thomas Jefferson of Virginia, late President of the United States. He invented a new mould-board, an account of which he first gave to the French Institute; but more minutely describes it in a letter to Sir John Sinclair, in 1798. Having never seen this plow of Mr. Jefferson, I am unable to give any opinion as to its merits; but understand, indirectly, that it was a great improvement upon those generally then in use in Virginia and farther south.

We now come to a very important improvement in the material and manufacture of plows in America, which so cheapened their construction, that those for one horse, strong and well made, after

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the most improved patterns, can now be had in New-York at $2 to $4 each, and a two horse plow from $5 to $7; thus placing this most useful of all agricultural implements, within the means of every farmer, however limited they may be. If the farmers are not furnished with good plows now, the fault is their own entirely.

The important improvement which I allude to, is, the cast iron plow complete, which as near as I can ascertain, was made about the year 1796, by a Mr. Newbould, an ingenious farmer of Burlington, New-Jersey. His was undoubtedly the first cast iron plow ever used in the United States, and to him should be awarded the honor of its introduction, although thus far it has been generally accorded to Jethro Wood of New-York, who had the shrewdness to get out a patent for one in 1814. He undoubtedly derived his idea from Mr. Newbould, (who took no interest in getting it into general use) or from those of English manufacture, and was never entitled to the least merit as the originator or improver of the cast iron plow. Mr. Newbold made his improvement without any knowledge of the progress in the same direction, in England.

Mr. Peter T. Curtenius, of the city of New-York, kept plows for sale as early as 1800, the shares of which were cast iron; but whether these were got up by himself or made from Mr. Newbould's patterns, I have not yet been able to ascertain. These plows were highly approved of, as may be seen by reference to an article on the subject, by Col. John Smith, in volume first, page 173, of the Transactions of the Society of New-York for the promotion of Agriculture, Arts and Manufactures, the second edition of which was published in 1801.

Mr. Newbould's plow not having obtained a general use, even in his own neighborhood, the old wooden mould board and wrought iron share still prevailing for many years after the introduction of his complete cast iron plow, others took up the subject in part.

Mr. Peacock, of New-Jersey, made a great improvement in plows as early, I am informed, as 1805, by substituting the cast iron for the wooden mould-board. The form of this, however, and the manner of putting his plow together were very imperfect.

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In the year 1808, Peacock's plow was so far improved as to be made share and mould board both of cast iron; and in various forms was extensively used in the vicinity of New-York, on Long Island and in New Jersey, under the name of the Peacock plow. This was six years prior to the first patent obtained by Wood.

Mr. Edwin A. Stevens, of Hoboken, New-Jersey, took up the plow in 1817, and for nearly four years devoted his ingenious talents to its improvement. He often tested it with a very accurately arranged dynamometer, and in various other ways, and against the best plows within his reach, and at length succeeded in making it so perfect that it found great favor with the public, and has been a standing model for most of the best plows since manufactured in the United States. He informs me that he took his idea of a cast iron plow from Mr. Newbould's invention.

Mr. Stevens patented his plow on the 23d of April, 1821, and was the first in this country to make use of the process of *cold chilling* the base of the land-side and lower edge of the share—a most important improvement—which was also embraced in his specification for a patent.

Mr. Davis of the District of Columbia, Mr. Bergen of Long-Island, N. Y., and Mr. Nourse of Massachusetts, have improved the mould-boards and other parts of the plow more or less, for particular purposes; and so far as I can learn, have done the same independent of any knowledge of each other at the time. These gentlemen are consequently entitled to more or less praise for their improvements.

There are probably one hundred different kinds of plows to be found in the United States, each of which has its advocates, and is entitled to more or less merit. To undertake a description of these would be tedious, I shall therefore content myself with a brief summary of such as are best adapted to particular purposes.

1. *The Root Breaker.*—This is a powerful implement, made without mould-board, something like a subsoil plow. It has a thick, strong coulter running down from the beam, locking firmly into the point, which is wrought iron, steeled at the end. The object of this plow is, to operate in newly cleared forest land, for the purpose

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of cutting up the roots of the trees and preparing it for cultivation. It will sever roots three inches in diameter with ease, and after once passing over the ground, the common mould-board plow can work it freely.

2. *The Prairie Plow.*—This, like the one above, is used for breaking up a virgin soil; but as it is the thick fibrous roots of grass centuries old that are to be severed, instead of those of forest trees, its construction is entirely different. Those now most approved of, have their mould-board and point terminating flat and wide. The point is of wrought iron, steel-edged, and must be kept very sharp in order to work well. Like the Root Breaker, it requires a powerful team to move it.

3. *Sod and Stubble Plows.*—Among the best we know for this purpose, are the different kinds made by Messrs. Ruggles, Nourse and Mason, of Worcester, Massachusetts. Their improvements are quite numerous, one of the most important of which, is their recently patented dial-clevis, which may be seen as attached to the end of the beam in the figures below. Combining this with the draft-rod, it enables the plowman to run his plow close along side of a fence or ditch, or turn up wet meadows, or rice lands, with the off as well as the near animal treading on the unbroken ground, instead of the open, miry furrow. It also enables him to guage the running of his plow more exactly in its work than any other clevis I have seen.

(Fig. 1.)

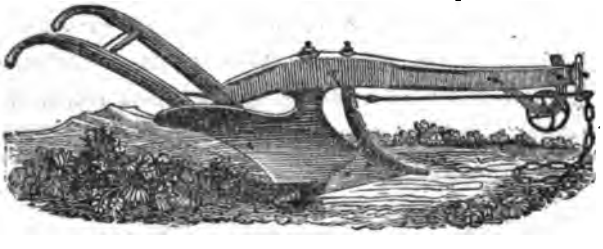

Fig. 1, represents Ruggles, Nourse & Mason's Eagle plow with the lock coutler, draft-rod, wheel, and dial-clevis.

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(Fig. 2.)

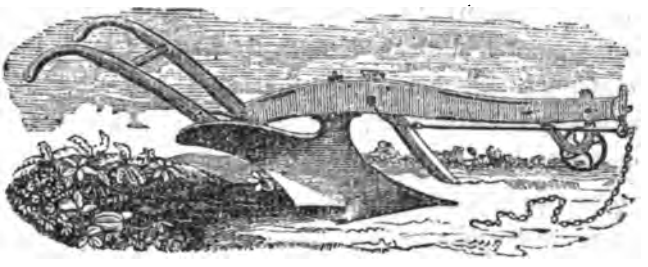

Fig. 2, represents the same with the cutter.

(Fig. 3.)

Fig. 3, represents the Eagle Self Sharpener. The improvement in this is shown at 1 in fig. 3, and is simply a bar of wrought iron *steeled* at each end, about twenty inches long, and passes upward into the body of the plow, where it is confined with one bolt. As it becomes shorter, and worn on the under side, it is readily moved forward and turned the other side up, thus always presenting a sharp point of *full length* and *proper shape*. When one end is worn off five inches, the other end is placed forward and performs a like service. The wing or share, as shown detached at 2, is made of either wrought iron with steel edge or of cast iron, and is also reversable, being used either end forward or either side up.

Both point and share are so very simply constructed that any blacksmith can replace them at trifling expense, or perpetuate the use of the original by new-laying with steel as they become worn.

Self-sharpening points and shares have been considered objectionable, inasmuch as they have not possessed sufficient strength,

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owing to their complicated *construction*, of *cast metal*: but a single glance at these plows will convince any person, by the simple form of the point and share of *wrought iron* and *steel*, that they combine strength and durability unequaled by any other form or construction, and that they are kept in repair at much less trouble and expense.

The point can be used projecting more or less forward, causing the plow to incline more or less into the ground, as different soils may require. These plows are fast obtaining great favor with the public.

4. *Various Plows, Single and Double Horse*, made for various soils. The improvements in these consist in properly constructing them for specific purposes. For example, those designed for a stiff clay, and especially for turning up the sod, must have an extra length in the curve of the upper part of the mould board. Such as are designed for light sandy soils are made with a wider and what may be termed a *half turn over* curve of the mould board, in order to prevent any part of the soil from boiling over in plowing, and partially filling up the furrow. Another advantage attending this greater curve is, it packs the furrow much more closely than the common shaped plow, which is an essential advantage to all light soils in working them.

5. *The Side Hill Plow.* These are of two kinds. One is made with a double mould-board, the beam working on the standard, and fastened by a catch, which makes it easy to shift the forepart of it from side to side of the share, and thus turn the furrow on the same side in going back and forth. The principle objection to this plow is, its great weight, in consequence of having an additional mould-board. The other kind and the one most approved of is in general shape and appearance much like the common plow;

(Fig. 4.)

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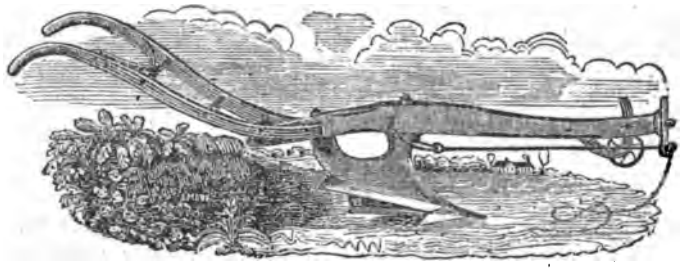
but is so constructed that the mould-board is easily and almost instantly changed from one side to the other, which enables the operator to perform the work horizontally upon side hills, going back and forth on the same side, and turning all the furrow slices downward with great accuracy.

The above plows are also frequently used for *level* plowing, as this leaves the field without a centre-dead or finishing furrow; nor does it make banks or ridges by turning two furrows towards each other. They are useful likewise in enabling the plowman to turn the furrow from fences and ditches.

Mr. Mooer, of Ithaca, New-York, was the inventor of the first plow mentioned above. Who the inventor or improver of the other was, I have not yet been able to learn.

6. *The Double Mould Board Plow.* The name of this plow sufficiently explains its character, it being made precisely like the common plow with an additional mould-board. It is highly useful in opening trenches for planting rice, the sugar cane, potatoes, or indeed crops of any kind one desires to cultivate in drills or rows. It is also an admirable implement for splitting furrows and covering seeds and roots in the drill. The sizes vary greatly, from the light one horse for rice, &c., up to the deep trenching four or six-horse plow.



(Fig. 5.)

7. *The Subsoil Plow.* The object of this plow is to follow the surface-soil plow, and stir and loosen the soil to a greater depth, without bringing any part of it to the surface. Its great improvement in the United States, consists in lightening its draft so much that a single horse can with ease operate those of the smallest size

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running in a light soil; and also in cheapening their construction. They can be had in this country from $5 to $15 each; in England they cost from $25 to $50 each.

8. *There are various Plows* made of two, three, and four shares each, for the purpose of plowing in wheat and other grain, and also to cultivate corn and other crops. One of them has recently been patented, but without any just claim to originality of invention; for they have long been in use in Europe, and are figured and described in every work of any size on agriculture which has been published in England within the last twenty years.

I have thus very briefly accomplished my task, and should this article find favor with the committee, I will endeavor another year, for a succeeding volume of the Transactions, to give some account of the improvements in other agricultural implements.

New-York, March, 1847.

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ON ANGOLA GRASS, &c.

By P. Lund Simmonds, London, member of the Royal Agricultural Society, England; corresponding member of the New-York State Agricultural Society.

The Natural History Society of the Mauritius for the encouragement of agriculture, in its prospectus for this year, offers gold medals, &c., value £10 and under, for the greatest extent of land planted in rice, maize, manioc, &c., and it appears to me that some of the enclosed list of queries which they have submitted to planters, might be found useful.

1. What is the general character of the soil of the land under cultivation on your own estates, and in those of your neighbors from whom you can procure the information?

2. Can you describe when any marked changes in the character of the soil within your district commence, and where they terminate?

3. The Society requests that you will furnish it with three specimens of each variety of soil taken.

1st. From the land actually under cultivation; 2d. From land in fallow; 3d. From virgin land.

Each in a quantity of about two pounds, taken at a depth of about four inches below the surface, and in the case of cultivated land, at a distance of about 18 inches from the plant of the cane.

4. What produce flourishes most in the district?

5. What articles of produce are cultivated in it, and to what extent is the cultivation of each carried?

6. To what extent is rice cultivated, and with what success? What has been the produce per acre, or per quantity sown?

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7. What kinds of rice are grown? Can you furnish a sample of each in the husk?

8. What artificial processes are employed for improving the land, viz: what manures, and what system of fallowing?

9. What plants are used in fallowing, and which are found to be most beneficial in improving the land, and most profitable as fodder, or for other purposes? To what extent has each been tried?

10. What has been the result of each practice or experiment?

N. B. The above questions relate specially to grains and vegetables.

WITH REGARD TO THE CANE.

1. What is the ordinary method of manuring, fallowing, clearing for planting, planting—as regards size and distance of holes, choice of heads or cuttings, number of eyes, &c., filling in, ridging, cleaning, irrigating, cutting, burning the land or clearing it for the *repousses*, (ratoons,) managing the *repousses*?

2. What are the most favorable seasons for carrying on each of the above operations, and at what seasons are they usually carried on?

3. What exceptions are there to the common mode and time of carrying on the above operations, and what have been the results?

4. What is the usual size of the squares in the cane fields?

5. What are the maximum, minimum and average produce of the acre in lbs. of sugar?

6. What is the average quantity of besou (canepiece) to the acre?

7. What are the average and extreme strength of the *besou*?

8. What is the yield of sugar to 100 gallons of *besou*?

9. The Society proposes to apply a certain sum annually, either prizes of medals, or money, for the encouragement of the cultivation of the cane. In what manner do you think this sum can be best employed; that is, in what respect is the cultivation of the cane, as at present followed in your district, most deficient, and most susceptible of improvement?

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ANGOLA GRASS.

Mr. George Gardiner, F. L. S., and superintendent of the Royal Botanical Gardens, Peradenica, Ceylon, in a communication to the Agricultural Society of that Island, in January last, thus speaks of a new description of fodder grass, which he has succeeded in introducing into the Island, and judging from the fact that it has quite supplanted the Guinea grass in Brazil, I should think its introduction would prove useful in the United States:

"During my extensive travels in the immense empire of Brazil, I found that almost every where Guinea grass, heretofore the staple article of green provender for both horses and cattle, had given place to a grass which was introduced to Rio de Janeiro about thirty years ago, from Angola, on the western coast of Africa. A description of the grass was first published by the learned W. Von Essenbech, in the year 1829, in the second volume of the "*Flora Brasiliensis*," of Dr. Von Martens, from dried specimens brought to Europe by that traveler. Eleven years previously, viz: in 1818, a popular account of it was published at Rio de Janeiro, in an anonymous pamphlet entitled "Observacões a cerea do Capim de Angola ultimamente trazido e cultivado aqui," (Observations on the Angola grass lately introduced and cultivated here.) Of this pamphlet I am sorry that I could not obtain a copy.

The term *Capim* or *Caapim* is the name given by the native Indians of Brazil, to grasses generally, and has been adopted by the Portugese inhabitants generally, specific names being added to distinguish the different kinds, as the *Capim de Angola* has as yet no English name, the best that can be applied is a literal translation of the Portugese one, *Angola grass*. In our botanical system this grass belongs to the genus *Panicum*, a genus which contains the Guinea grass, and many other useful sorts. In general appearance it resembles the Guinea grass, but produces a much heavier crop. It is besides more readily propagated, as it grows well by cuttings, every joint becoming a new plant, and indeed I have never seen plantations of it made in any other way. At Rio de Janeiro, and almost every where else in Brazil, this grass is the only green fodder given

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to horses, and I have never heard of its producing the laxative effect which it is well known Guinea grass does. It was natural then, from my previous knowledge of this grass, that I should be desirous of having it introduced into the United States.

To my excellent friend Jno. Miers, Esq., F. R. S. the well known Chilian traveler, I am indebted for the seeds. From a small packet received recently by the over land mail, I have succeeded in raising 145 plants. Another small packet arrived by the last mail, but it has not yet had time to germinate. As I shall use my best endeavors to increase this stock, both by seeds and cuttings, I hope to be able in a few months, to distribute it throughout the United States. Of the seed which arrived by the last mail, I have sent a small supply to the Botanic Garden at Calcutta, to the Agricultural Society there, and to the Royal Botanical Garden at the Mauritius. (For the benefit of those who are acquainted with botanical distinctions, I add to this short notice, the specific characters of the *Angola and Guinea grasses*, to show how far they are technically distinct.)

ANGOLA GRASS, (*Panicum spectabile.—Nees.*)

Spike decompound, erect, the partial ones deternate and somewhat secund; spikelets ternate and setose-ciliate; inferior glume ovate-acute, twice shorter than the spikelet; superior, acuminate-setigerous; caryopsis ovate-elliptical, acute at both ends; culm erect, straight, setose-hirsute at the nodes; sheaths hispid; leaves lanceolate, acuminate, flat, straight, scabrous; ligulæ lacerately ciliated.

GUINEA GRASS, (*Panicum maximum—Jacq.*)

Panicle racemose, decompound, verticillate, erect spreading; pedicles naked or filiferous under the flower; spikelets elliptical, obtuse, with a smooth glabrous mucrone; inferior glume ovate orbicular, obtuse, sheathing; male flowers two-valved; caryopsis a little rugose; culm erect; nodes as well as branches of the panicle covered with silky hairs; sheaths somewhat granular, and, together with the flat leaves, either glabrous or covered with short hairs.

TUSSAC GRASS.

The introduction of the Tussac Grass of the Falkland Islands, (*Dactylis cæspitosa,*) into this country is occupying a good deal of

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attention, and I should think its culture might be successfully tried in the United States, in marshy situations and on peat bogs. Its herbage seven or eight feet high, with luxuriant huge ovate juicy bulbs, would form an agreeable fodder for cattle. The Highland and Agricultural Society of Scotland have offered their medium gold medal this year for an approved report, founded upon actual experience on the cultivation of the Tussac in this country; and at the meeting of the Royal Agricultural Society of England on the 13th May, a very interesting letter from Lieutenant Moody, addressed to Lord Palmerston, on this grass, was read.

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PLANK ROADS

Their construction and advantages, with observations on present system of making public roads.

By George Geddes, Esq., Civil Engineer, Fairmont, Onondaga county.

Good roads are very important to the interests of Agriculture. The surplus productions of the soil are valuable to the producer, just as they are near market, and if distant, the avenues for their conveyance, become a consideration of the first importance. The common roads of the country, are very generally badly located, little or no regard having been paid to the grade; and the system by which they are attempted to be kept in repair, is such, as must result in their being in bad condition a great portion of the year. The tax is an unfair one; for the persons who are to enjoy the benefits of the road do not pay for the repairs; but the persons who own property within the town or road district, are taxed in proportion to their property, without regard to the amount they are to use the road; and it often happens that in the vicinity of large towns the road districts are entirely unable to keep in repair a section of road, over which not only the produce of these districts is to pass, but the whole business of perhaps fifty such districts. The results of such a system must continue to give us bad roads; and the only remedy, is to adopt some course which shall result in taxing the travelers with the expense of keeping the road in order. No tax can be more equitable, if it be not in excess, than that of the toll gate.

The only thing to guard against, is the diversion of the money thus raised from the repairs of the road. In those sections of the country that are yet but sparsely peopled, it would be impracticable perhaps, to introduce a system requiring the payment of tolls from

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the traveler, as the expenses of collecting the tax would bear too large a proportion to the total amount. In such districts, the first settlers must open the roads, and continue to work them, until the amount of travel will justify the collection of toll. But in all those parts of the State that have been settled for any considerable period of time, we cannot too soon commence levying a tax upon those who use the roads, and expend the money thus raised, in the immediate vicinity of the gates, in repairing the roads. As the roads become better, we may lessen the rates of tolls, being always strict in applying the receipts for the benefit of those who pay.

In some instances, it would be for the advantage of the public, to make a large outlay in order to have a good road before the receipts from tolls would be sufficient to make it. In such a case, the creation of a company, who will furnish the capital necessary to at once make a good road, and trust to the tolls to pay the interest and reimburse the capital within some fixed period of time, and besides keep the road in repair, will be for the public advantage.

Common road making, is a branch of engineering that perhaps has received less attention from scientific men, than almost any other. Canals, railroads, tunnels, and works of like splendor, are more attractive than the humble country road; and it has been trusted to a class of men who possess but small qualifications, for the charge of so important an interest.

It might be impossible to determine the cost of all the roads in the State, so that the comparison might be made with the cost of the canals and railroads; so too, it might be impossible to make a correct comparison of the cost of the cars and boats, and the wagons and sleighs; but it is certain that the sum total of the cost of railroads and canals, and the cars and boats, is vastly below that of the cost of the highways, and the wagons and sleighs that are used on them. The importance of the interest demands judicious legislation; and the application of the highest intelligence in the expenditure of the means provided. A proper system of laws would develop the skill necessary, and we must be content to wait for such legislation before we can expect to see such great skill exhibited in constructing roads. In every county, three commissioners should have charge of

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all the roads in their county; having in their employment a competent engineer, to direct the expenditure, and superintend the erection of bridges, and all the repairs; this would soon produce a change vastly beneficial to the public.

The Revised Statutes, contain a general law relating to turnpikes, in which the particular manner of construction is all specified, as though the revisers knew all that would ever be known about making roads. It is strange that it should have happened that McAdam should have rendered himself so famous by teaching a system of road making, precisely the reverse of the one determined upon by the revisers; but so it was.

They followed the old English plan, which required a bedding of stone upon which to place the facing of broken stone.

The peculiarity of McAdam's plan is, that there shall be no such foundation, but that the broken stone shall be placed directly upon the earth; experience having proved that, if there was a stone of any considerable size under the broken surface, it would in time rise up through it; *and he discarded every stone over four ounces in weight.*

PLANK ROADS have very recently been introduced into this country. According to the patent office report of January 1843, they had their origin in Russia, and were introduced into Canada by Lord Sydenham, he being induced to try the experiment in consequence of the great cost, in the first instance, of McAdamising a road, and the expense of beeping it in repair.

The first road made of plank was near Toronto. The three miles nearest the city having been McAdamised; the plank road commenced, at that distance from the city, and was extended some miles into the country. The plank road lasted eight years, requiring during that time merely nominal repairs. The McAdam road in the same time required an annual expenditure of four hundred dollars a mile in repairs—amounting in the eight years to $3,200 a mile, a sum much more than sufficient to replank a road. When the plank road required a new covering, one-half of the stone road was dug up and flung on top of the other half, and a track of plank eight feet wide

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was laid down in the place occupied by the stone. It happened that I visited Toronto at the time the plank road was rebuilding, and the eight feet track was being put into the stone road. The plank first used were sixteen feet long and three inches thick. They had worn out in the middle for a space of about seven feet wide—the ends of the plank being entire. The middle of the road had settled by the weight of the teams, and loads that had passed over it. The sills were sound enough to justify their use for another covering. I saw the eight feet track in use; and then expressed the opinion, that, as the narrow road was so much more evenly pressed down by the loads than was the wide road, it would be firmer, and that if more than one eight feet track was demanded by the travel, it would be vastly better to lay two eight feet tracks, than one sixteen feet, not only because they would settle more evenly, but that the facilities for passing would be greatly increased. A road sixteen feet wide, experience proved would be used in the middle. A wide load, going slowly along it, rendered it very difficult for a vehicle that was movin gfaster, upon overtaking the wide load to pass it. In making my report to the commissioners for the distribution of the stock of the Salina and Central Square Plank Road, at whose request I had visited Toronto, for the purpose of obtaining information upon this subject, I proposed two eight feet tracks for their road, and made my estimate of the cost accordingly. A year later I again visited Toronto, and to my surprise long planks were entirely abandoned. The road as it was extended into the country being made of a single eight feet track—having a smooth earth road to turn out upon, along side the plank.

The result of these examinations was, that we determined upon making a single track upon one side of the centre of the road, and wherever we had ordinary earth to grade twelve feet wide upon the other side of the centre. Over some light sand we laid two tracks, and in one instance for a short distance, we laid a sixteen feet road, owing to peculiar circumstances; so that we have a single plank track on one side of the road, and an earth road to turn out upon; and we have two tracks, four feet apart, of plank; and we have a wide plank road. The two separate tracks of plank are the most perfect road, and furnishes the greatest faciliti for teams to

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pass. The eight feet track is next in convenience, for it being on the side of the centre of the road that gives it to the loaded team that is going into town, (and the loading is chiefly going to town,) the unloaded team generally does all the turning out, while the loaded team travels on one side of the centre, and not in the middle of the road; while on the sixteen feet plank the traveler inclines to keep the centre, and the slow movements of the loaded team in turning out very generally drives a light team off the ends of the plank upon sidling ground. When a team upon the single track, is overtaken it is much easier to pass it than it is when it is moving along the middle of the wide track; for the slow going team is on one side of the centre, in the case of the narrow road; and there is a twelve feet earth road on the other side of the centre for the fast going team to pass by upon. The only way to make the wide track as convenient for passing, as the narrow, is to grade an earth road, outside of the ends of the plank; and that would add to the cost, and make the road bed so wide that it would be difficult to drain it well.

It has been proposed to fasten a scantling upon the middle of a 16 feet track, leaving occasional vacancies for teams to cross from one side to the other, as a means of causing the travel to pass upon the ends of the track. This remedy for the evils of a wide single track, is expensive and objectionable from the inconvenience in crossing freely at any point.

Every view of the question results in this: that roads, that are not greatly traveled require but a single eight feet track, save over very soft ground; and that roads that require more than one such tracks, should have two narrow tracks, in preference to one wide track. It is safe to say that whenever two tracks are demanded for the accommodation of the travel, (unless the necessity grows out of the fact, that the earth is very unsuited to road making,) that, that demand will surely justify the investment of the money the second track will cost; for it must be a very great amount of travel that will not be accommodated by a single eight feet track, with a carefully cared for earth road to turn out upon along side of it.

Experiments have been made to test the proper mode of laying the plank; "On the Chambly road the planks ar twelve feet long,

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but laid diagonally, so as to make the road but eight feet wide. The weight of half the vehicle and load coming suddenly upon one end of the plank, and the other end not being kept down at the same time, the traffic constantly tends to disrupt the road, and the planks are loose, and spring from end to end." * * * "At Quebec part of the road has been planked, the plank being laid lengthwise. It was considered that the planks would stand better the friction, and when necessary, could be more easily taken up, and the road repaired. One strong objection to this mode of laying the plank is found to be, that the horses cannot keep their feet when much weighted, and are much exposed to falling, in consequence. Under all these circumstances most have approved the manner in which the planks are laid on the Toronto road." (Patent office report, 1843, page 129.)

In constructing plank roads, it is necessary to have the earth upon which the plank are to be laid, broken up and made fine, that they may touch the earth at every point. This is important, for if any space be left for air under the plank, or along side the sills, dry rot follows. The sills should not be large: four inches square is sufficient. They should be perfectly bedded into the earth, and there should be broken earth under them, care being taken that they should not rest firmly upon rocks or other hard substances, that will not allow them to settle.

All earth formations of this nature will settle some, and the sills must be permitted to go down as the rest of the structure settles, or a space for air would be left between the plank and the earth, and the sills would thus support the plank; whereas the plank should rest upon the earth at every point. Nothing is gained by wide or deep sills, and the whole support of the road, is the earth that is covered by the plank, and the amount is in no wise increased by wide sills. The chief use of sills, is to grade by, and to keep the road in form until the earth has become settled.

There is in the vicinity of Toronto a short plank road, that has no sills at all under it, and the grade is very nearly as exact as in those roads where sills are used.

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The plank having been laid, the next thing is to grade a road some ten or twelve feet wide on one side, and two or three on the other, by taking earth from the ditches on each side, and bringing it by a ditch scraper just up to, and even with the upper side of the plank, so that if a wheel runs off the track, it passes upon a smooth surface of earth. The ends of the plank should not be laid even, but a part should project from two to four inches by the general line, to prevent a rut being cut just along the ends of a plank. If the ends of the plank are even, and a small rut is made, the wheel of a loaded wagon will scrape along the ends for some distance before it will rise up to the top of the plank, unless the wagon moves in a direction nearly across the road; but if the wheel cannot move two feet forward without coming square against the edge of a projecting plank, the difficulty of getting on the road is avoided. It is not necessary to pin or spike the plank to the sills.

Perfect drainage must be secured, and to that end, the ditches must be deep and wide, and good sluices wherever water crosses the road. This is the important point—DRAIN PERFECTLY.

The thickness of the plank must be decided by the amount of travel. If it is sufficient to insure the *wearing* out, and not the *rotting* out of the timber, four inches is the thickness; if that thickness is not justified by the travel, then three inches should be used, but not less. The kind of timber is, too, a point that must be controlled by circumstances. Pine is used at Toronto. Hemlock on the Salina road. In some of the western States it is likely that oak might be procured at a reasonable price. The number of feet (board measure) of lumber required for two sills four inches square, for one mile, is 14,080. Plank, three inches thick, for a single track eight feet wide, will measure 126,720 feet. The grading and laying a track, will vary in cost, according to circumstances. When an old road way is used, and hills are not to be cut down, or vallies filled up, it will not vary much from fifty cents a rod for one track.

In those sections of the country where lumber is cheap, plank roads must go into very general use; and in some localities, it is the only road that can be made to endure the changes of the climate with any reasonable outlay of money. Less power is required to draw loading over them, and they are superior in every respect to McAdam roads while they last.

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PREPARATION OF SANDY AND LIGHT SOILS FOR WHEAT.

By Hon. ELIAS COST, Ontario county.

R. P. JOHNSON, Esq. Sec., &c.:

As these are truly the days of improvement in the various sciences, it is some what surprising that agriculture should be so far in the back ground. There are some encouraging appearances, and inquiry begins to pervade the public mind, to see if their cannot be some improvement in this all important branch of public undustry also. I would therefore offer my mite to my brother farmers, on the preparation of fallows for wheat.

Some nine or ten years since, I adopted a new method of preparing fallows for wheat, which was *one plowing*—and this I follow whether I plow in June, July, or August. I apply the cultivator as often as necessary, to prevent any vegetation from growing, and the land is thus kept perfectly clean for the seed. Should the land be quite hard it makes no difference, but is all the better, if you can obtain sufficient loose soil to cover the seed.

When I first commenced this mode of farming my neighbors laughed at the idea of obtaining a crop in this way. In the course however, of two or three years, they became convinced, by observing that I raised the best wheat, according to the quality of the soil, and I am haypy to say, that very many in this region, have adopted the same plan, and I do not know of one who has had occasion to regret it, for in every instance that has come to my knowledge, it has succeeded well. My land is what may be called coarse sand and gravel, sandy loam and some rather stiff sand. Whether the same practice would answer on a hard and clayey soil or not, I cannot tell.

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I sow my wheat generally between the 10th and 25th of September. When the wheat is sown the cultivator is passed over the land but once, which covers the wheat better than two or three times with the harrow. By the above plan, about one-half the usual labor on fallows is saved, and a more bountiful crop may be anticipated, than from the former method of plowing three times, and using the harrow two or three times. It is a well known fact, that a stiff, hard clay soil, provided the ground had been well prepared, will grow more wheat to the acre than can be grown on a sandy or loamy soil. Now the question is, why is this so? To me it is obvious, the wheat plant grows most luxuriant on a hard soil, and that is the reason that one plowing on these sandy soils, is preferable to three, and that land thus prepared will produce more wheat to the acre. The one plowing leaves the ground hard compared with three plowings, which, in these soils, leave the land loose, open and spongy, unsuited to the plant. This has been tested often in this neighborhood within the last few years.

The practice which I have adopted, is confirmed by a statement given by Henry Colman, Esq., in his account of the culture of wheat in England. He says: "The soil preferred for wheat is a strong soil, with a large proportion of clay; but experience has of late years, contrary to early and strong prejudices, determined that even the light and loamy soils are capable of bearing heavy crops of wheat, provided they can be sufficiently consolidated. This is often done by driving sheep over the land after sowing, and by an implement called a *presser*."

"This implement passes over the land in the direction of the furrow, and it forms on the furrows two deep drills at a time, the two rollers being eight or nine inches apart, and the blade of the roller, if it may so be called, or the rim being thin at the edge, and growing wider above the edge; and forming as it revolves, two furrows, hardened by its weight, into which the grain drops as it is sown; and when it comes up, it appears as if it had been regularly sown in drills of eight or nine inches apart, according to the width of the revolving pressers from each other." "The steam-presser is in fact, an abstract of a drill roller, consisting of but two cylinders of cast

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iron, which following the plow in the furrows, press and roll down the newly turned-up earth."

"I believe the soil for wheat cannot be too deep; though, as I have already stated, it may be too loose at the top, and in such cases, requires shallow plowing and treading, or pressing on very light soils, in order that the roots may be firmly fixed in the soil, and the dirt not liable to be blown away from them."

I use a two horse cultivator for putting in all seeds such as wheat, rye, oats, barley, and best of all for peas. This covers about six feet at a time. I use a smaller one for corn, having given up entirely the use of the plow. I have given above my views with regard to the proper management of sandy and light soils for wheat; and if it shall prove advantageous to the farmers of New-York, I shall be satisfied.

Yours respectfully,

ELIAS COST.

Oaks Corners, Ontario county, March, 1847.

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LETTERS ON THE WOOL TRADE.

By J. B. Nott.

(No. 1.)

J. M. Sherwood, Esq.,
President of the N. Y. S. Agricultural Society:

My attention has been drawn to the letter of Hamilton Gay, Esq., of New-York, addressed to the Editors of the Journal of Commerce and published by them in that Journal.

To the wool growers of New-York this letter is one of deep interest, and should be extensively circulated. Mr. Gay, at great personal and pecuniary sacrifices, has rendered manifest those obstacle which stand in the way of profitable exportation of American wool. Our obligations to him are by no means trivial, for giving notoriety to facts, which show most conclusively that it is in the power of the American wool grower so to extend the market for his staple, as to give it a healthy and a reasonable activity,—thus securing to present prices a steadiness and permanency, which they are not otherwise likely to receive.

It has been more than intimated by the manufacturer, that he is desirous of reducing the prices for the in-coming clip, some four or five cents per pound below the prices of last year. The announcement has produced anxiety and alarm; but it would seem probable from Mr. Gay's letter, that if this is so, the exporter will cause the manufacturer ultimately to regret his selfish temerity. The causes which have chiefly marred the success of Mr. Gay's experiment, are in his estimation, the unclean condition of the fleeces, as they come from the hand of the shepherd, and the heterogeneous character of

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the lots of wool, as they come from the lofts of the wool collector. There is no doubt that he is perfectly correct in his estimate and it is equally undoubted that he might have said, that these same causes operate injuriously upon the interests of the American grower of fine wool, even in his own market; and unless removed, this department of agricultural industry, will receive a blow from which it will be difficult to recover.

It is, however, too apparent, that neither the letter of Mr. Gay, nor the remarks of any one else, will have an efficient agency in correcting the faults of the unwary or the frauds of the dishonest. The evils complained of, can only be cured by making a radical change in the mode of conducting the wool business; they have sprung almost exclusively from this source, and if it is amended, a cure is certain to follow.

Nor is the change requisite, environed by insuperable difficulties—it will at once be secured by a hearty, vigorous and concerted effort, on the part of those whose interests are most deeply affected; indeed it is more than certain that the change has already commenced. Had not inspection laws become deservedly obsolete, here would be a legitimate field for their operation. But tho' it is unwise to revive the absurdities of a by gone age, we must carefully inquire if we do not hold in our own hands a remedy more effective than any that can be furnished by legislative enactments.

Fleece wool is of such a nature, and the mode of transmitting to the manufacturer such, that neither the faults of the wool, nor the frauds of the shearer can be detected until it reaches the hands of the stapler. Were it furnished by each individual farmer in lots so large, that the expense and trouble of stapling each lot separately would not be too onerous, it is apparent that then each lot could be traced to the particular spot from whence it came, and self interest would soon apply an efficient corrective both to faults and frauds.

But wool is now collected in small lots from an immense multitude in a way that it is not possible to trace each lot. The collectors for the most part are unable to discriminate properly between their different purchases, or if able, have not the wisdom or liberal-

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ity to make that difference in price, which simple justice and sound policy demand.

So long as the profits on sheep husbandry were so excessive as to satisfy the most grasping cupidity, men preferred being careful and honest, to being mean and careless; but, after the profits have fallen to that level, above which no agricultural business can long continue, it is not to be wondered at, if a great and rapid deterioration takes place in the quality and condition of the article, since there is no fair and equitable discrimination, made in its market value.

This brings me to a point not touched upon by Mr. Gay, but one to which it is apparent the American manufacturer of broadcloths cannot be indifferent; and which should be at any rate, pressed most forcibly upon the notice of the growers of fine wool.

The present mode of purchasing wool has already had the effect to deteriorate the character of the flocks over large sections of the country. There is now an almost universal complaint, that there is no adequate discrimination in price; the evil is most seriously felt, and men are in hot haste to make changes in the character of their flocks, which they, as well as the manufacturer, will, ere long, it is to be feared, seriously lament. The changes now being rapidly made, would soon be complete and irretrievable, were it not that there are some men, who either from the magnitude of their clip—or from business connections—or peculiarity of situation—or some other cause, deal directly with the manufacturer and not with his factor, and thus obtain prices which bear some sort of relation to the stapler's estimate of the value of the wool. If it be important to the manufacturer of fine cloth to put a stop to the degradation of our flocks, he will surely see that it can be done only by putting an end to the present manner of conducting the wool trade, and will at once lend his effective aid in bringing about a result so desirable to the prosperity of the American farmer.

As a very large proportion of the wool purchased by the wool factor is obtained from men who keep but small flocks, and who have therefore no character to sustain as flock masters, it is very apparent from the laws of trade, that however bad may be the condition of their wool—unless it is separated in the market from

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that of others, who are truly flock masters, it will more or less according to its quantity, materially affect the price of the other, though a superior article. To show clearly that I am not mistaken in this position, allow me to direct your attention to the unwashed and filthy wool imported last year, costing under seven cents per pound, and its influence in regulating prices. I was shown imported wool by a manufacturer, which cost him in the condition it then was, thirteen cents per pound. Yet it was equal in appearance to American wool worth thirty-five cents per pound. Owing to the shrinkage of this wool, however, it took three pounds of it to make one pound when it was worked into cloth, which therefore was equivalent to thirty-nine or forty cents per pound. American wool worth thirty-five cents per pound will shrink about one third in its preparation for cloth, and therefore cost when in cloth about forty-three or forty-four cents per pound. It is, therefore, apparent that this filthy, foreign wool, last year, had a material influence in ruling the market price of American wool of medium quality.

Tag locks, filth and twine cannot enhance the value of any portion of the wool in market; nor ought a system longer to be tolerated that makes little or no difference in the price of wool thus basely contaminated, and wool wholly free from censurable impurities. Look at the consequence; the price obtained may adequately remunerate the grower of the one, while to the grower of the other, it is utterly ruinous.

The one keeps his small flock poorly and cheaply by the road side or on the refuse of his farm, while the flock of the other consumes the entire or chief product of the farm, and the wool it yields is the only or main crop that its owner carries to market. To each therefore the same price will not bring the same returns. The one may and will probably continue to raise wool in his small way, without any material change in his condition, whatever may be the result of any effort to alter the absurd practices of the wool trade. But the other cannot and will not long persevere as a wool grower, unless there is an alteration; and if the present sheep-walks are in consequence turned into plowed fields, the ordinary farmer will in his turn experience the ruinous consequences of neglecting studiously to foster such modes of marketing wool as will secure to

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each shepherd an exact recompense for his skill and care. It may be possible for the agricultural products of the country to sink still lower in value than they now are. Perhaps there is margin enough for a great depreciation in prices; but it will sooner or later become necessary for the manufacturer to inquire whether his interest will be promoted or prejudiced, by having the *farmers* of the United States become merely peasants. May he not so depreciate the value of wool that he will ultimately injure himself?

Until the letter of Mr. Gay, nothing has ever before been said, that I am aware of, about the necessity of sorting fleeces for market. According to Mr. Gay, wool destined to European markets, must be sorted, else the fullest advantage will not be realized from the venture. Nor is it less certain, that an unnecessary loss is annually submitted to by the neglect or rather by the impossibility, under the present system, of doing the same thing with fleeces destined for home consumption. The necessity of sorting in the one case springs out of the division of manufacturing labor. The division of labor it is true is not carried as far with us as with foreigners; it nevertheless exists to a great extent—is daily becoming more perfect, and from the necessity of the case, must ultimately be as complete here as elsewhere. But even as things now are, it is not difficult to show that the sorting of fleece wool is requisite to prevent an otherwise unnecessary loss to the wool growers.

One factory that I can name, values a certain description of wool only at thirty-five cents per pound, because it is unsuited to their style of goods; while the very same wool is valued in another factory at forty cents per pound for the opposite reason.

Here is the evidence in one case at least, that in this country, as in England, the manufacturer undervalues the wool brought to his factory for sale.

Again the mousselin de laine manufacturers in some instances use wool of precisely the same market value with the satinet maker. But the style of the wool is different: the staple of the one being longer than that of the other.

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The interest of both would be promoted by sorting wool, not only as to its quality and the condition of the fleece, but also as to style, and undoubtedly both would be willing to pay a trifle more per pound—a trifle it is true—but success often depends upon trifles.

The staplers of satinet factories and other manufacturers of coarse fabrics, frequently collect large stocks of wool of a quality used only by the manufacturers of broadcloths. Yet for this superior wool no more has been paid by the satinet maker than for that of inferior quality, which is perfectly well adapted to his purpose. I have before me the evidence of one case, where an advance of twenty cents per pound was obtained by a manufacturer of satinets, for wool of a quality too good for his purpose. So also the makers of mousselin de laines, purchase large quantities of wool in order to select from it only that which has sufficient length of staple to suit their purpose; the residue is disposed of to others. A company can be named who annually use 200,000 pounds of mousselin de laine wool, and yet buy 350,000 pounds to select from.

Those manufacturers that require the best and the finest wool for their goods, are compelled, under the existing practice, to buy large quantities of wool unsuited to their purpose. An establishment can be named that has 150,000 pounds of wool now on hand, thus obtained, and which they will gladly return to the farmer at cost. The Middlesex company use annually one million pounds of wool; what then must be the amount of surplus wool purchased annually by them.

A Vermont manufacturer of broadcloths purchased a lot of wool in Dutchess county; among it was some wool brought from his own immediate neighborhood, and which he could have purchased before it left home if it had suited his style of goods; without paying a price for it enhanced by the profits of two factors, through whose hands it had passed, and the expense of the journey to Dutchess county and back. The manufacturer must be paid for this useless employment of his capital. He is paid, even though unwittingly; he is paid by the flock master.

I have collected numerous facts to sustain the position I have taken, but one has recently come under my notice so conclusive that I select it in preference to others for this purpose. A lot of wool,

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amounting to several thousand pounds, was put up in the manner complained of, in 1844, but was not sold till 1845, and was then sold without being sorted. The clip of the same crop for 1845 was put up as it ought to be, and was also sold—but sorted; a few hundred pounds of the coarser fleeces amounting to 1-10 of the quantity put up in 1844, being separated. Both lots were cleansed by the same manufacturer, in all respects under the same circumstances, except as I have mentioned, and yet the last lot brought ten cents per pound more than the former. Both lots were stapled and cleansed, and the real value of each determined by the manufacturer under circumstances which leave no doubt that the truth was fairly ascertained and stated.

Those who take short sighted views of things, may not see fully and clearly the injurious consequences of the evil here pointed out. They may say that under the present system, quite as much, if not more wool is purchased by the manufacturer than would be purchased under any other system; and if one class of manufacturers accumulate large stocks of wool that they do not want, they can sell them to others who do. All this is undeniable. But the manufacturers no more desire to be wool-merchants than they desire to be wool-growers, and thus acquire themselves the united profits of the farmer, the merchant and the manufacturer.

The history of Commerce shows that with few exceptions this jumble of different pursuits is fatal to prosperity. If the manufacturer, by the force of circumstances, is, nevertheless, compelled to some extent to pursue this course, he will not transfer an accumulation of, to him, useless wool, to a brother manufacturer, without a profit, and whatever that profit may be, it is so much abstracted from the profit of the wool-grower.

Again: Whatever retards the prosperity of the woolen factories, abates measurably the profits of the flock master, and among the various hindrances to the growth and extension of this description of manufactures, none has been more potent in its baneful influence than the known and acknowledged fact that an enormous amount of capital is requisite to ensure success. I hope to be able to show, by and by, that it is for the interest of the wool-

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grower to do all in his power to lessen this evil, and bring the cotton and the woolen manufacturer more nearly to a level.

The 150,000 lbs. of wool referred to, has cost that Company not less than $52,500, a very nice sum to lay perfectly idle for more than a year. The bare mention of the fact will convince any one that this Company will readily pay more than it now does for the description of wool it actually wants, if it can be saved an outlay so enormous and at the same time so unnecessary.

I remain yours, &c.,

J. B. NOTT.

(No. 2.)

J. M. Sherwood, Esq.,

President of the N. Y. S. Agricultural Society.

Dear Sir—In my last I stated that many farmers "were in hot haste to change the character of their flocks." Inquiries much extended since that letter was written, show that the change is going on quite as rapidly as had been anticipated.

Allow me, therefore, to utter a word of caution on that subject. It is surely evident that the manufacturers require varieties of wool for their purpose; fine as well as coarse, long stapled as well as short.

Absurd then it is for farmers to disregard this fact, and rush hurriedly into the production of only one kind of wool. They must exercise a wise foresight in determining what are likely to be the future demands of the wool market, and cautiously pursue a corresponding course. Hasty and inconsiderate changes will work evils both to the individual and the community that cannot be rapidly or easily corrected. Men who have been for years patiently and carefully improving their flocks, can at a single blow destroy that which time, care and toil only can restore. But let them prudently exhaust the subject by investigation before taking an almost irretrievable step.

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I find that the holders of the largest flocks are mainly the growers of fine wool; any material change in the character of these flocks then will seriously augment the quantity of medium wool in this market. But this description of wool already constitutes the bulk of the clip in market, and a further augmentation will inevitably be followed by a depreciation in price.

It is stated, by Mr. Gay, and the money articles of various newspapers, that the incoming clip will exceed that of last year. These writers differ widely in their estimates of the increase; some placing it very low, others making it excessive. They all, however, agree that in consequence of the increase there must be a reduction of price. It is not my purpose to admit or deny the truth of their statements. Whether they are right or wrong, I am quite convinced, from extensive inquiries, that there was no excess of fine wool produced last year, nor is there likely to be any excess this year.

The price of wool last year was from eight to ten cents per pound less than the year previous, and was purchased at an average of about thirty-three cents per pound, yet clips of fine wool from Ohio were sold as high as sixty-eight and a half cents per pound; and from actual inquiry I find that numerous clips from this State were sold at forty-five, fifty, fifty-four and fifty-seven cents per pound; while it is well known that thousands of pounds of fine wool were imported, which cost the importer much more than the highest price named.

Washington county, Pa., and the neighboring portions of Virginia, abound in fine wool of an excellent character; yet the proprietors of these flocks had been in the habit of getting only thirty-five to forty cents per pound. A manufacturer of great eminence sent his wool sorter into that county to become acquainted with the character of the different clips, and last year, notwithstanding the depressed state of the market, this wool sold for an enormous advance from the prices of previous years, enhancing materially the price of Pennsylvania sheep, and producing for them suddenly an active demand. In these cases, it is true, the condition of the fleece and the quality of the wool was carefully attended to in sorting; had it been otherwise the parties would have felt as severely and

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as unnecessarily the consequences of a glutted and depreciated market as did their neighbors, who were less discreet or less fortunate, as the case may be.

More than this, manufacturers are now saying that wool must again recede in price, notwithstanding which many of them are making inquiries for fine wool from those very agents whom they are instructing to buy at prices reduced from last year.

There can be no doubt then that the market for fine wool is not yet overstocked. Those growers of fine wool who have been led by bitter experience to different conclusions, would do well to inquire whether their losses are not rather attributable to the mode in which their clips were sold, than to the market in which it was sold, and direct their efforts rather to remedying the palpable absurdities of the wool trade, than to irretrievably destroying the character of their flocks.

It is certain that the price for medium wool has been enhanced by the quiet submission of the grower of fine wool to the dictation of the wool speculator. His object is to buy wool without regard to quality, as cheap as possible, and if he can bring fine and medium wool to nearly the same standard, he is a gainer even though he pays a little more for medium wool than he otherwise would, to accomplish his purpose; for he saves largely on the price of fine wool, which he thus depreciates. To the farmer this is not very apparent, but is well understood by the stapler. In stapling wool he makes ten sorts, to each of which a price is affixed. In the three or four lower numbers the difference in price between any one number and one next above is barely three or four cents; but in the three or four higher numbers of the scale, the difference is ten cents, and with some it is as high as fifteen cents.

Nor is this all; a difference of a few cents per pound is made by the manufacturer between lots of wool, according to the rate, if I may so speak, of the stapling. One lot of wool, upon stapling, yields an unusual quantity which runs into the higher numbers of the stapler's scale, and little or none in the lowest number of the scale. In another lot of apparently equal value, this may be exactly reversed, and it would be appraised by the same manufactu-

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rers at several cents less per pound than the former, although the great bulk of both lots run through precisely the same intermediate numbers.

It so happens, therefore, in a vast number of cases, that where the wool buyer makes little or no difference between clips of wool, the manufacturer makes a difference amounting to one-fourth, and often one-third, of the cost of wool. It would not, therefore, be hazarding too much to say, that the clips of fine wool have hitherto tended to preserve the tone of the wool market to the manifest injury of the fine wool growers.

Thus much as to the present state of our fine wool market. But what are the prospects for the future. The flocks of fine wool are not probably largely on the increase; yet it is probable that changes are being made in the machinery of the woolen factories that will ultimately require an increased supply of fine wool. Manufacturers have prospered during the last few years, and the accumulation of capital which results from prosperity, necessarily tends to those alterations and improvements in machinery which enable the manufacturer of woolen fabrics to produce articles of superior style and finish, which must tend to an increased consumption of fine wool.

It is well known that the generality of drapers prefer foreign broadcloths to those of American workmanship. Yet the course of improvement is onward, and fabrics every way equal to the foreign, will in the end be produced. Indeed instances are not wanting to show that foreign broadcloths have been so successfully imitated as to deceive even the agent of the foreign manufacturer. Success in one case tends to the renewal of the attempt by others. It is safe therefore, to conclude, that the market for fine wool is steadily and constantly enlarging.

Again: it is not too much to say, that farmers residing on the high priced lands of this State, who grow that kind of wool which can be raised by any body and by any means, are doomed to feel a competition that will compel them materially to lower their demands. A gentleman upon whom I can place reliance, assures me that men who have been several years resident in Brazil, are now selecting sites in the far west, where wool can be raised wholly by pasturing, and

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with no additional expense beyond that of the shepherd and his dog and who will ultimately pour into the market immense quantities of low priced wool, which, while it will compete with our medium wools, cannot for a long time materially affect that kind of wool which can only be produced by close attention and care.

Besides it would seem certain that sooner or later wool must be exported from this country. If this is so, while one can easily imagine that the New-York farmer may be able to compete with the European grower of fine wool who is not burthened with high rents and heavy taxes; it is not so easy to see how he can compete with those who grow an inferior wool on cheap lands, and with little cost. The period for exporting wool may be nearer at hand than most of us imagine. I am satisfied from inquiries, that under the present system wool is received into the stapling room of the manufacturer at an advance of at least five cents per pound, upon the price received for it by the farmer. Will it cost much more than this to place it in the hands of the foreign manufacturer? If reliance can be placed upon information said to be accurate, probably not. The freight of wool from New-York to Boston, is within a fraction of a cent of its freight to Europe; and if fleece wool is properly put up, and as properly sorted, all the charges upon the sale in an European market, freight included, will not exceed four cents per pound. This may all be so, and yet the relative state of the two markets be such as not to justify any one but the farmer himself in being an exporter of wool. What time must elapse and how much the farmer must suffer, before he will make so desperate a venture, none but himself can determine.

From all these considerations, it appears to be justifiable to warn the farmer that he should make haste very slowly in destroying the character of his wool.

In making a change in the wool trade, it is very clear that whatever correctives are applied to those faults and frauds pointed out in a previous letter, they must be of such a nature as to make the farmer personally responsible for the character and condition of his wool; any thing short of this will be wholly inoperative.

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I am well aware that these men who profit largely by the present system, and can sell fribs and frith for wool, will neither advocate nor acquiesce in such an arrangement; but those who have characters to sustain as flock masters, are under the imperious necessity of protecting their own interest.

They should, therefore, give a cordial and hearty co-operation to every feasible plan that will secure so desirable an event. But the farmer will not accede to any plan however well it may effect this purpose, unless it also secures to him prompt pay, and also a fair and discriminating price. Nor can any plan be effective that does not secure the cordial co-operation of the more enlightened and liberal manufacturers.

It is folly to suppose that any systematic warfare can be carried on successfully between the farmer and the manufacturer; either the one or the other may be occasionally the victors in the fight, but any contest is, in the end, injurious to both.

The farmer must be insured a fair and steady market for his wool influenced only by the supply and the demand, or he will eventually abandon the business for some other more sure in its returns. Nor can the manufacturer be coerced by any combination of farmers to habitually give more for his wool than its fair price in a market uninfluenced by extraneous and fictitious means.

Yours respectfully,

J. B. NOTT.

(No. 3.)

J. M. SHERWOOD, Esq.,

President of the N. Y. S. Agricultural Society.

Dear sir—From the facts and arguments of my last letter, it would seem certain that there must be created, either by arrangement or by the force of circumstances, a set of men who will fulfill in this country the duties that are performed in England by the wool broker. Either the farmers alone, or in conjunction with the

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manufacturers, must appoint agents who sell exclusively on commission. Will such an agent fulfill all these requirements which I have mentioned as necessary to success? Let us examine the point according to the immutable searching laws of business.

Such an agent must be responsible to the manufacturer for the character of the wool he sells him, and of course he will be compelled to know the exact condition of every fleece that comes into his warehouse, and at once point out to the farmer its excellencies and its defects. So far then the scheme works. The manufacturer is sure of the condition of the wool, and the farmer rewarded for his care. Will he be rewarded for his skill? Unless fleeces are sorted it cannot be done; if sorted with skill and judgment, it can. No one is fool enough to believe that although a manufacturer may be satisfied that the condition of the wool is all right, and can also see with his own eyes that every fleece in the lot offered him by the agent has the very quality of fineness, length of staple, and strength of fibre that he requires, that he will, nevertheless, pay no more for such a lot than for one of which he knows either nothing, or knows that it will not suit his manufactory.

It is useless to waste words to show that from the very circumstances enumerated, that any, that all manufacturers will pay, under these circumstances, a fair discriminating price. Allowing that manufacturers are sharp and selfish, they are not fools and madmen.

I am allowed to state, that a factory of high character and large capital, have resolved no longer to buy wool unless it is presented to them exactly under the circumstances I have mentioned, for they have been compelled for a long period to manufacture a kind of wool they do not want, to their great injury, with machinery that is fitted for superior wool. But they had accumulated under the old system a large stock of inferior wool, and it had to be got rid of. I feel quite sure, if my inquiries were further extended, I would be able to state the same facts of a good many others.

It is very certain, that without a free and frank intercourse between the agent and the manufacturer, no sorting of fleeces can be satisfactory. The agent must know what style of wool the latter

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wants, and though he may arrange his fleeces under ever so many numbers, unless he knows how his numbers run among the sorts of the wool stapler, his sorting will do but little good. The fact is, the system must work well, because it is for the interest of both the farmer and the manufacturer cordially to co-oporate.

But will the manufacturer hold a free intercourse with the agent of the farmer? Will he do anything that is for his own interests? It is absurd to answer the question.

Will the farmer receive prompt pay? In one sense, which I will explain by and by, I hope not; in another sense, I answer, not only as prompt, but far more prompt than under the old system.

To a small extent I am a wool grower myself, and unfortunately a very needy one. I am ever puzzled to know what to do with my wool. I have waited for the wool dealer to call, but hope deferred maketh the heart sick, and when he did call I have sold for whatever he choose to give. Afterwards I had found he had given a price which sustained his interests better, far better, than mine.

I then undertook to sell my own wool to the liberal wool merchants in Albany. Sometimes it arrived before the market was formed—of course then it had to be warehoused; and however diligent I might afterwards have been, I never could find the right time to sell in order to secure the highest market price; and I am sorry to add, that when sold at last, warehouse charges, and those et ceteras which are appended to accounts of sales, convinced me that I would have done better to have sold even before the market price was formed. However it may have been with others, I have never been able to count upon the same fair prices and prompt returns for my wool, that I have been able to for my other farm products.

This year my wool is remitted to an agent, who charges me one cent per pound commission for selling, which covers all expenses except insurance, and for which I pay him one-quarter of one per cent. each three months: he at once gave me an advance of two-thirds of the value of the wool, for which advance I pay him seven per cent. interest. Am I gainer or loser by the operation?

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Shall I waste your time and exhaust your patience by an absurd argument to show that I am a gainer. I will simply say to the farmer, that no argument is necessary to establish this point. You are no better than the cotton grower, and that is precisely the condition under which his cotton is disposed of; he ships his cotton and draws his bills against it for two-thirds of its value.

These are the very terms under which the manufacturer that buys your wool disposes of his wares at the commission house he employs. Nay it is the usage of the commercial world, settled by common experience, and therefore must in the end be confirmed by the experience of the farmer.

I have stated my own case, and while I am writing an instance has occurred almost under my eye which equally illustrates the position I have taken.

A farmer sold his wool in a neighboring city last year for thirty cents a pound. He has this moment just carried his wool to the same place, clipped from the same sheep and every way a lot of wool similar to the wool of last year. He has driven from one end of the street to the other and has been offered only twenty-four cents per pound. The market is not formed. What will he do? he needs the money: must he submit to this sacrifice, or had he not better do as I have done and employ a commission merchant?

Will this system give to the farmer the highest market price for his wool? Does the old one secure to the farmer the highest market price? Let the farmers of Western N. Y. who refused thirty-four cents for their wool, and afterwards took thirty-one, or have their clip yet on hand, answer this question.

The market price of wool, like that of any other commodity, is constantly varying. The farmer is the last man, speaking of them generally, to keep himself well advised of the fluctuations of the wool market. But allowing that he does, is his position such and his wool such a commodity that he can with promptness avail himself of every favorable change in the market? In ninety-nine cases out of a hundred certainly not. But if his wool is lying in the warehouse of a man who knows all about the fluctuations of the

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market, and who contributes his full quota of influence in fixing prices, and who is daily receiving orders for wool; there it is in a position most favorable for receiving the full benefit of any sudden impulse given to prices. If farmers have been injured by the old system—manufacturers have not always been benefitted. I enquired the other day of a wool stapler when a certain factory would buy their wool? The answer was "they will lay in their stock whenever they can buy it best." Guided by this very wise *saw*, a factory laid in a two years' supply of wool, and by the shrewd operation lost $25,000. I presume they are not alone in their misery, for, as the wool market has been generally a receding one, every factory that has been eqally sharp has met with a similar rebuke. It is, therefore, to the mutual advantage of the farmer and manufacturer, that wool should remain in first hands. The one, that he may buy only as he wants, the other that he may be benefitted by any increased demand.

Neither the farmer nor the manufacturer has any right to lay aside their legitimate business and become speculators.

I do not mean that they have no moral right, but that if they do so, they will violate laws which I am sorry to say many of them obey more rigidly than they do moral laws, the laws of legitimate business, and yet it is done by both. The one who buys, not to supply the actual demand of his factory, but in obedience to principles of buying when he can buy best. The other when he seeks not merely for fair and remunerating, but for exorbitant prices. In a small way it is a wise maxim, that he who buys a thing, not because he wants it, but because it is cheap, is apt to find in the end that it is dear at any price. If it does not apply to the large operations of men of business it must be very strange. At all events, both farmers and manufacturers may be assured that we live in times when it may be safely averaged that he will thrive best who best understands the theory of the nimble ninepence.

The farmer will feel skittish at the idea of adopting such an arrangement, so completely at variance with the usual mode in which he disposes of his other farm products, but he must remember that his hay, grain, butter, cheese, &c., are consumed everywhere and by

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every body, and therefore he may well do his own marketing. But wool is a commodity used only by the manufacturer, and both are so situated that they cannot come together at the right time, if at all; hence the necessity of a third man between them, whose business it should be to do for each what neither can do so well themselves.

Perhaps a sound and searching analysis of this subject would show that it would be much for the interests of the community if all business was carried on upon this principle; under a better state of security such would be the case. The merchant is of necessity a speculator; he runs risks, although in theory he only regulates the exchanges between the producer and consumer. This occupation is a lottery, in which some draw prizes, a few magnificent ones. The great majority, however, only accumulate sorrow and disappointment; at least such is the melancholy testimony of the commercial statistics of every metropolis of business.

You may say to me that you deal directly with the manufacturer, and therefore the plan proposed will not affect you. I answer you, and other flock-masters who are in the same situation, the manufacturers with whom you deal are "all honorable men;" nevertheless these men who are consuming their five or ten hundred thousand pounds of wool annually, would not be troubled even with your insignicant clip of eight hundred or a thousand pounds, if they were not gainers by it. Nevertheless they would much rather purchase even your superior clips of the commission agent. He will be better pleased and you a gainer by the change.

You may have been fortunate—are well pleased with the prices the manufacturer has paid you; still there are large growers of wool who tell me quite a different story, and will not send their wool to the manufacturer direct under any circumstances. Besides, you may not think me very flattering, but I could convince you, if I chose, that manufacturers sometimes boast of the bargains they have made. Every where I hear the farmers complaining of the unfairness and illiberality of the manufacturer; can it be explained, then, how it is that by some he is deemed worthy of unlimited confidence, and by others complained of for his want of liberality?

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Farmers will not like to be told they are not competent to sell their own wool; it is nevertheless the experience of business men, that unless they are constantly in the market they had far better consign their wool to sell, to an experienced and competent agent, than to undertake to be their own salesman.

Yours, respectfully,

J. B. NOTT.

(No. 4.)

J. M. SHERWOOD, Esq.,

President of the N. Y. S. Agricultural Society.

Dear sir—It is time that the "main question be now put." Is the plan detailed in my last feasible? In part I have anticipated the answer. If it is consonant to the known laws of trade, it is feasible, and not otherwise. In Europe, wool and almost every other commodity is bought and sold by the broker exclusively, and in this country the practice is gaining ground; nor can any sound reasons be given why the wool business of this State, like four-fifths of all the other business of the country, cannot be advantageously carried on upon the same principle.

But practice is better than theory. The plan is now in operation, and so far as one year's experience can be a guide it is likely to work well. Dr. J. P. Beekman, on his return from the State fair at Poughkeepsie, was induced, from some facts which came to his knowledge, to believe that some farmers did not receive a fair equivalent for their wool. He induced Mr. Homar Blanchard, of Kinderhook, a man well qualified by experience, by his moral qualities and by business habits, to undertake an establishment of the kind which I have been advocating. The result has been that 140,000 lbs. of wool have been sold during the year. For 70,000 lbs. of which prices have been obtained ranging from thirty-seven and a half to fifty cents per lb. In a majority of cases the wool sold has brought as much as the year before, notwithstanding the price of wool generally was from eight to ten cents per pound less. In some cases it brought more, and considering the difference in the state of the mar-

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ket, in no case less. Thus far everything is propitious. Mr. Blanchard, after a year of assiduous industry, has materially enhanced his previously valuable qualifications, and has done so by acquiring and deserving the confidence and friendship of manufacturers. I have examined piles of letters from the manufacturers, who in all cases express their perfect satisfaction with the purchases made, and a strong desire that the project may succeed.

The wool is brought into the warehouse, each fleece examined, sorted according to quality and condition; into five different sorts. In a case that occurred while I was there, a lot of one hundred and fifty-five pounds was examined, and fifteen pounds of useless twine, taggs and filth removed.

In another case, the same day, a lot of wool was brought in, which was sorted in No. 2; last year the wool from the same sheep was sorted in No. 1. But this year the farmer had neglected to shear the sheep at the proper time; a depreciation in consequence had taken place. Large clips, notwithstanding their being sorted, are kept separate from all others.

It is brought sometimes in sacks and sometimes in sheets; sacks are supplied to any farmer who may want them, at the cost of the material, or if returned in good order, at only a charge of one shilling per sack for its use; where sacks are brought by the farmer, if in good order, fifty cents is allowed for them, unless requested to be returned. Every charge for transacting the business, save that of insurance, is covered by a commission of one cent per pound. The insurance is one quarter of one per cent for each three months. The wool is sold only when ordered by the owner.

At first sight, many a farmer may imagine that he can save this commission of one cent per pound by selling to the wool factor; but does any man suppose that the wool factor works for nothing? He is either paid a commission no less, or makes a profit much larger than this. The farmer who places his wool in the depot for sale, has the advantage of knowing precisely the cost of sale, while he who sells to the wool factor is utterly ignorant of the charges he

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incurs. One thing is certain, the wool factor has his pay, and they are not heard often to complain of its inadequacy.

The probability, however, is, that in all cases, owing to the sorting of the wool, both as to quality and style, as well as to condition, its price is enhanced more than enough to cover the agent's commission.

Wherever it is required, an advance is made for two-thirds of the value, for which interest is charged at seven per cent. A friend of mine sent his wool to the depot for the sake of receiving this advance. His wool was sold for five cents per pound more than he could have obtained for it at home, by which he saved not only his commission and interest, but much more.

No where, in the course of my visits, have I found any one buying or selling wool. Yet many are anxious to sell. At the Kinderhook depot, wool can always be sold at the market price. But few are likely to be suited with present prices. Be it so. Any who need the money can obtain two-thirds of the market value at once, and then wait, if so minded, until prices mend, or the market is settled.

This year a stapler has been added to the concern. A sample is selected from each of the different sorts, and presently will be stapled. The manufacturer will thus be able to buy his wool understandingly, and know precisely the value of his purchase.

Through this arrangement, the farmer and the manufacturer are brought together under favorable circumstances, each knowing the precise value of the commodity about which they are bargaining.

I have complained a good deal of the manufacturer for not paying discriminating prices; let me aplogize for him, however, somewhat. The value of wool is determined by close and critical examination. No stapler can come within five cents per pound of the true value of fine wool, unless he examines it under favorable circumstances. At all events, he cannot do it in the dark garret or gloomy wool loft of the farmer. He must then, when prizing fine wool in these places, guard against error, and he will so guard as to make the wool cost no more, at any rate, than it is worth.

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Can you blame him? How much better then, is it for you to sell your wool when its value can be as accurately determined, without the chance of error, as if examined at the stapler's bench.

Some facts very interesting to the breeders of fine wool have been elicited by the liberal and enlightened agency of the manufacturers who have patronized this establishment. I will not go into detail, but state one or two inferences which I have drawn from them.

First, no man should buy fine wooled sheep without consulting the stapler; none but him can determine the precise relative value of clips of wool. A farmer may approximate to it, but cannot arrive at it exactly, nor can it be settled by even the examinations of the microscope.

A lot of grade wool, which, if judged of by a specimen selected from the shoulder, would have been pronounced to be of the finest quality, showed, on stapling, conclusively, that the fleece of the full blood sheep is by far the best.

Nor can any one carry on, understandingly, the breeding of fine wooled sheep, without having their fleeces stapled. A lot of wool was sold from the depot upon condition that if the stapling would warrant it, an addition would be made to the price. Each lot was separately stapled; one supposed by the owner, and by every one else, to be equal to the best was found, on stapling, unexpectedly to run into the lower numbers of the stapler's scale, showing to the owner that he had bred in and in too much. Every one knows that this will affect the hardihood and constitution of the sheep, but who supposed it would affect the curl and softness of the fleece?

A farmer having a very superior clip of wool, was induced last year to cross his ewes with a buck having a heavy fleece. One was procured valued as high as $60. But when the animal was shorn and the fleece brought to the stapler, although the wool looked fine and soft, and was well washed, it was found that a large share of the eight pounds which it weighed was animal oil or gum. He has received the information in time to prevent a serious calamity. Allowing him to be perfectly correct in his plan, the animal in question was not the proper one to be used.

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Another farmer's clip which was believed to be as good as any, proved, on stapling, to be relatively far better than he or those who claim to be judges imagined.

This man will have to take a wide range in making an examination of bucks to cross with his flock. He cannot use any of his neighbor's, without endangering the character of his fleece.

We can now understand, probably, how it was that the celebrated flocks of Ohio, which were raised at Steubenville in that State, were so rapidly improved. The breeder was a manufacturer, and his staples made him acquainted with the character of the fleece of every buck and ewe he bred, and of every one he purchased. He could thus breed intelligibly, and make the precise crosses required to give his wool that exquisite character for fineness and softness which it ultimately obtained.

Much is said about the comparative value of sheep with light and those with heavy fleeces, without the subject being thoroughly understood by the advocates of either. I have in my eye two clips, each of which were well washed and clean, and weighed not quite 3½ lbs.; the fineness of each was nearly the same, but the value of one was several cents per pound more than the other. The one was close, compact wool, free from that animal oil and gum with which the other abounded. The advocate, therefore, of sheep with heavy fleeces must discriminate between fleeces which, though equally heavy, do not yield the same weight of available wool to the manufacturer. To some extent, this may be judged of by the hand and eye, but the scouring liquor will tell the truth exactly, and every breeder of sheep should become acquainted with its effects upon the fleece of the bucks he intends using in his crosses.

I have seen a statement of the relative shrinkage of several clips of wool, all well washed and in good condition. Some shrunk 40 per cent, others only 33⅓. The buck I have alluded to above would probably overgo even 40 per cent, reducing his 8 pounds of fleece to 4⅘ pounds.

In a word, every shepherd who would act understandingly in so important a matter as the improvement of wool, must call in the

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aid of that information which has been developed in this communication. I find that many breeders of fine wool have erroneously embraced the idea that the weight of the fleece cannot be increased beyond 3 lbs., without injury to the quality of the wool. If the increase is to be produced merely in using bucks with heavy fleeces, the position is impregnable; but if the increase is made by careful breeding, so as to give roundness and firmness to the form, and closeness, and compactness to the wool, then is the position unsound.

I can name a Saxon flock of the purest blood, consisting of many hundred, composed exclusively of ewes and the proper proportion of bucks, that shear more than three pounds per sheep. Should the length of staple be increased, by the effect of climate or breeding, this excellent flock will greatly exceed their present large average, and this without any deterioration of its quality, which is now equal to any in the country.

The Hon. Mr. Nicholas, of Genesee, whose long experience as a wool grower entitles his opinions to respect, informed me that after inquiries made among manufacturers and others, he had altered his opinion on this point. He has, at a considerable expense, brought sheep from Washington county, Pa., for the purpose of crossing with his flock, under the full belief that he could increase the quantity of wool, without materially deteriorating its character.

Mr. Daniel Rodgers, of Hoosic, also an eminent wool grower, and one who justly prides himself upon the quality and condition of his wool, holds the same opinion, and has procured sheep from the same place for the like purpose.

Mr. Morell, of Tompkins county, so well known for his excellent work on sheep, holds the same opinion. I believe he goes so far as to say that he can cross his Saxons with selected Merinoes, without detriment.

There must be a good deal of difference in the quantity of wool sheared from different flocks, owing to the keep of the flock. Dr. Beekman, after shearing, rejected forty ewes from his very superior Saxon flock; twenty of these were picked out and bought by a

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farmer who so kept them that he had but seven lambs, and did not shear two pounds of wool from each ewe. The refuse twenty were purchased by another neighbor, and so kept that he raised twenty lambs from his twenty ewes, and sheared over four pounds of wool from each.

The late lamented H. D. Grove communicated to me before his death, a statement which tallies precisely with the above; his belief was that high feeding, in one or two generations would completely change the character of the animal.

One statement more, and I will finish this too protracted discussion. I have stated frankly and fearlessly those facts which my inquiries elicited, and which tend materially to encourage the grower of fine wool. I have done so because truth required it at my hands. But I must also state that the stapler has pointed out a description of wool which is sure to be much in request, and which I must own appears to me to promise quite as much profit as short stapled fine wool.

It is fine soft wool, of long staple, suited to the manufacture of warps, shawls, and the finer description of flannels; it is also used for fillings, after having been sliced by machinery, and thus converted into short stapled wool. Some manufacturers say it answers their purpose well, but the better opinion is, that for superior cloth there is no substitute for short stapled wool. Large and heavy fleeces of this kind of wool can be procured, but they must not be confounded with heavy wool that shrinks in the scouring liquor fifty per cent, while the wool named shrinks only thirty-three per cent.

The specimens I have seen of the wool from Lord Weston's flock, recently imported by Mr. Jewett, of Vermont, would seem to answer admirably for that purpose.

Combing wool is also much in request, and the great increase of the machinery employed for this purpose leaves no doubt that this kind of wool will be largely in demand. The wool that is required by the muslin des laines manufacturers requires a staple of at least three inches in length. In fineness, it wants to be between the Leicester and Merino. Those conversant with this wool say that pro-

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bably a cross between the Leicester and Merino would furnish exactly the article. It, however, must have great strength of staple, as well as length, or it will not answer. Those whose situation justifies the breeding of mutton sheep would do well to look into this matter.

Yours, respectfully,

J. B. NOTT.

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MANAGEMENT OF MERINO SHEEP.

By J. L. Randall, Clay, Onondaga county.

Dear sir—Your favor, requesting me to send you an article giving an account of my management of Merino sheep, was duly received, and I the more cheerfully comply, because I consider the wool growing business already a primary object of agriculture with very many of the farmers of many States, and have no doubt that it may become one of the chief objects of agriculture throughout the Northern and Western States. My management in the season for grass is, to have the lambs drop from about the 25th of April, to the 20th of May; to keep the sheep where they may be protected from storms when necessary, and where they may be often under the eye of the shepherd, so that any young lambs that may not be able to draw nourishment from their dams, may be assisted and saved. If the weather is warm, and the ewes in good condition, sometimes nearly an hundred per cent. of lambs may be raised; while at other times, in case of frequent storms of rain and snow, it requires the most vigorous effort on the part of the shepherd, in housing and protecting them. And notwithstanding all his efforts to save, he sometimes meets with some loss of young lambs. I think my average to be about 90 per cent. of lambs raised.

I usually shear early in June. I think that if breeding ewes are suffered to retain their long, thick fleeces on their backs, much later than that time, the warm days will so affect them as to make them uncomfortable, and cause them to afford less milk for their young. Great care should be taken to give them shelter, in case of long or cold rains soon after shearing.

Dry lands for pastures, with frequent changes, are very necessary, where only one flock is kept, and a certain amount of pasture is al-

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lotted them. It is much better so to arrange their pastures, if possible, as to be able to change them frequently, from one field to another, so that each in its turn may become fresh and green. Sheep do not require long feed, but need a sufficient quantity, with plenty of salt. When troubled with ticks, I dip the lambs in a decoction of tobacco, about eight or ten days after shearing. Lambs should be weaned as early as the middle of August; they should be put into a fresh pasture of tender grass, so far from the dams as not to hear each other, with one or more tame sheep, to aid in making them also tame. They should have plenty of salt, and be kept on the very best pastures until the season for feeding hay. They should, as well as all other sheep, have access to, or be driven under shelter, during the cold storms of autumn. Ewes, after the lambs are taken from them, should have short pasture for a few days, say 10 or 12, in order to dry up their milk, and thus prepare them for good pastures, with which they should be supplied, together with plenty of salt, until the season for feeding hay. All other sheep should be kept on good dry pastures, with frequent changes and salt. With this treatment, they will be likely to be sufficiently strong and fleshy to commence the winter.

The seasons for grass are also the time for pruning the flock, and of disposing of such individuals as are most objectionable as to fleece or form, after receiving a mark at the time of shearing, denoting the objection. This plan for raising the strength and condition of the sheep, during the seasons of grass, I think, will always be found to be much cheaper and better than that of letting them remain poor until winter, and then attempting to raise them by extra feed of hay and grain. At the commencement of winter, every sheep should have a place, and be in its place. I feed altogether in racks placed in barns that are closed on all sides, but so ventilated that when necessary the air may be made nearly equal with that of the field. I feed plenty of salt, and give them free access to water. I usually feed from six to eight quarts per day, to one hundred sheep, of corn, or its equal in peas, shorts, or some other grain, generally ground. I commence feeding grain at the same time that I do hay. I make no allowance for waste of hay, none at all. I cut my grass, if clover, (which I prefer,) when in bloom; other va-

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rieties tolerably green. I feed hay morning and evening, what they will eat, and no more; and usually grain at noon, also straw of whatever kind I have; the greater the variety the better; and what they leave in the racks affords sufficient litter to keep their apartments always dry and clean.

My pure blooded merino sheep, the pedigree of which may be traced to the hands of the importers without any cross whatever with any other breed, and which are known and certified to be such by gentlemen of the highest respectability and unquestionable veracity, I keep and breed by themselves. I do this, in the first place, to keep this invaluable breed pure beyond a doubt, and secondly, because I consider the purity of blood the first requisite towards perfection of fleece. In selecting sheep for breeding, I have reference to fineness, evenness, length, thickness and style of fleece, worn by a well formed animal. Any sheep whose pedigree cannot stand the ordeal, or about whose pedigree there is the least uncertainty, is placed among the grade sheep which I also keep and breed by themselves, in flocks according to age, size, and condition. The smaller the number in the flock, the better; but not to exceed one hundred. I use pure merino bucks. I also keep the sexes by themselves, and rarely meet with any loss of sheep, except by dogs or other accidents. Hon. S. Lawrence, of Lowell, is right in his opinion, (American Shepherd,) that a breed may be reared which will give four pounds of exquisitely fine wool to the fleece. My full blood merino ewes have never given so small an amount on the average; bucks, from five to eight pounds, and sometimes more with higher feed. Sheep should always be well tagged previous to turning to grass in the spring. Much pains should be taken in washing and shearing them; also in folding the fleeces, that they may be clean and whole.

Respectfully, yours,

J. L. RANDALL.

Lysander, April, 1847.

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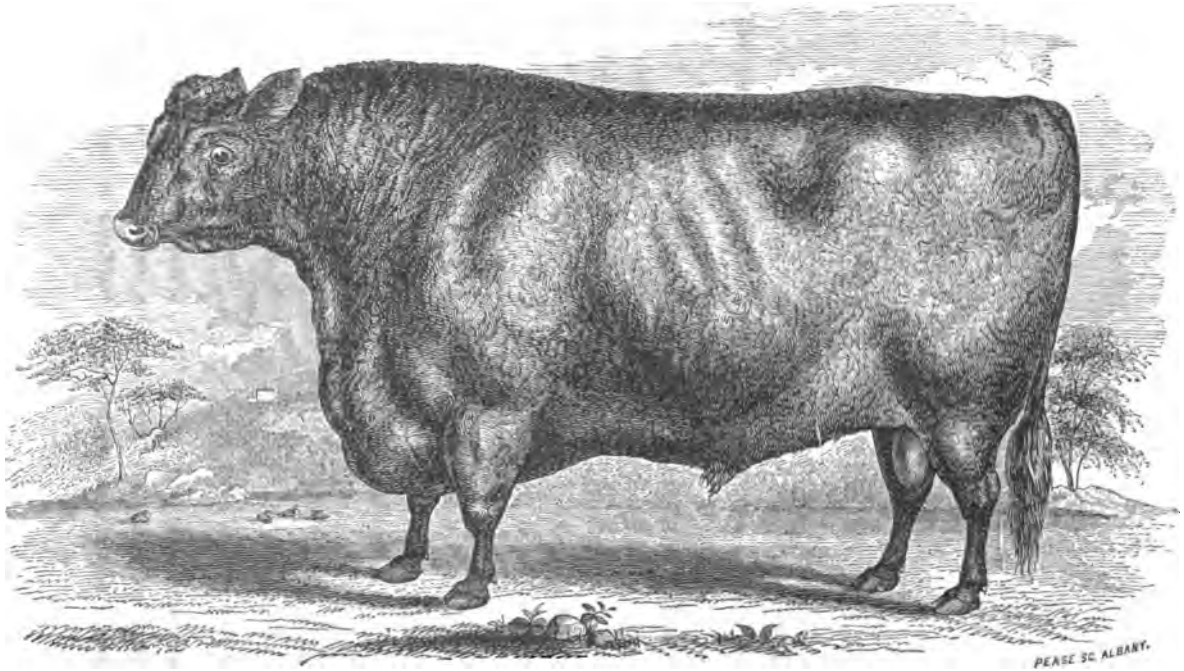

A GALLOWAY BULL,

Which obtained the first prize of thirty sovereigns, at the Show of the Highland and Agricultural Society of Scotland, in 1845.

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GALLOWAY CATTLE

Their adaptation to this country.

By Sanford Howard, Assistant Editor Cultivator, Albany.

B. P. Johnson, Esq.

From considerable inquiry and reflection, I have long believed that the Scottish West-Highland and Galloway breeds of cattle, would be well suited to a large portion of this country. This belief induced me to offer a communication in reference to the characteristics and qualities of the West-Highland breed, which was published in the society's transactions for 1843. Learning from conversation with you, that your opinion, formed in reference to the two breeds in question from what you saw of them in Great Britain, agrees with my own, I have concluded to present for insertion in the forthcoming volume of transactions, some observations on the Galloways. I am the more inclined to do this, because incorrect notions seem to prevail in regard to them. From the terms in which they are sometimes spoken of, the idea seems to be entertained that they possess but little merit, and are decidedly inferior when compared with some other breeds which are held in considerable estimation.

I will first endeavor to furnish a correct description of this valuable breed of cattle, by reference to the best authorities, and then proceed to show their adaptation to portions of this country.

Culley, Low, Youatt, Lawrence, and other British writers, describe the Galloways as being generally of a black color, though sometimes red, brindled, and dun; but the black being regarded as most indicative of the pure breed, other colors have become more rare than formerly. They are, says Youatt, "straight and broad in

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the back, and nearly level from the head to the rump. They are round in the ribs, and also between the shoulders and the ribs, and the ribs and the loins. They are broad in the loins, without any large projecting hook [or hip] bones. In roundness of barrel and fullness of ribs, they will compare with any breed, and also in the proportion which the loins bear to the hook bones or protuberances of the ribs. Rev. Mr. Smith, author of the survey of Galloway, says, 'when viewed from above, the body appears beautifully rounded like the longitudinal section of a roller.' They are long in the quarters and ribs, and deep in the chest, but not broad in the twist. The slightest inspection will show that there is less space between the hip or hook bones and the ribs than in most other breeds, a consideration of much importance, for the advantage of length of carcass consists in the animal being well ribbed home, or as little space as possible lost in the flank.

"The Galloway is short in the leg, and moderately fine in the shank bones—the happy medium seems to be preserved in the leg, which secures hardihood and a disposition to fatten. With the same cleanness and shortness of shank, there is no breed so large and muscular above the knee, while there is more room for the deep, broad, and capacious chest. He is clean, not fine and slender, but well proportioned in the neck and chaps; a thin and delicate neck would not correspond with the broad shoulders, deep chest, and close compact form of the breed.

"The Galloway is covered with a loose mellow skin of medium thickness, and which is covered with a long, soft, silky hair. The skin is thinner than that of the Leicestershire, but not so thin as that of the improved Durham, but it handles soft and kindly. Even on the moorland, where the cattle during the greater part of the year, are fed on the scantiest fare, it is remarkable how little their hides indicate the privations they endure,"—[*British Cattle, pp.* 156, 157.

This breed of cattle derive their name from that district of country in Scotland, called Galloway, which embraces portions of several counties. They are unquestionably an aboriginal breed, belong-

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ing rather to the mountains, than the lower country, and have probably been bred, down to the present time, in greater purity than most other breeds. Youatt observes, "there is, perhaps, no breed of cattle which can more truly be said to be indigenous to the country, and incapable of improvement by any foreign cross, than the Galloways."—[*British Cattle, p.* 163.] The same remark is made by Prof. Low. "The breed of Galloway," says he, "is peculiarly confirmed in its characters, and thoroughly adapted to the condition of the country. * * * * It would be a retrogradation in improvement to attempt a mixture of blood with a race so long acclimated, and so excellent in itself, as that of Galloway. The great advantage of having a breed, possessing a uniformity of characters, is manifest in Galloway, as in every country where a fixed race with determined characters exists. The breeder has always in such a case, as was before observed, the assurance of being able to reproduce in the offspring, the character of the parents; whereas, in countries where no uniform breed has been established, he never can be so assured of the result of coupling animals together. The cattle of Galloway, though they have all the characters of resemblance which constitute a distinct breed, yet vary greatly in size and form, according to the fertility, natural or acquired, of the farms on which they are reared, showing the importance of providing an increase of food for the animals, when growing in bone and muscle."—[*Low's Illustrations of Domestic Animals, p.* 16.

There is no doubt of the correctness of the above remarks, and from them it is easy to discover why all attempts to improve the Galloway breed by crossing it with others, have proved unsuccessful. According to Culley, a cross was tried in Bakewell's time, with the Dishley variety of the Long Horns, and at a later day improvements have been attempted with the Short Horns.

Prof. Low, in allusion to this, says: "Efforts have from time to time been made to cross the breed by the Dishley Long Horns, the Ayrshires, and the modern Short Horns. These attempts, it is believed, have been all failures, in so far as they were designed to improve the general breed of the country; and modern breeders with better knowledge, have turned their attention to the improvement of the existing race."—[*Illustrations, &c., p.* 16.

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Youatt, in reference to the same subject, remarks, that the Short Horns have, in many instances, improved the stock of the districts where they have been introduced, though they have failed in Galloway. "They have," he says, "at least in the first cross, produced manifest improvement, although the advantage has not often been prolonged much beyond the second generation; but even in the first cross the Short Horns have done little good in Galloway, and as a permanent mixture the choicest southern [Short Horn] bulls have manifestly failed. The intelligent Galloway breeder is now perfectly satisfied that his stock can only be improved by adherence to the pure breed, and by care in selection."—[*British Cattle, p.* 163.

Lawrence, who wrote about the commencement of the present century, observes: "It is not improbable that there were only two original species [breeds] of neat cattle in Scotland, those common to the islands and the mountain country, called Kyloes, in color black, brindled, dun, brown, red; the black being the favorite color in Scotland: and the polled breed, chiefly confined in later times to the shire of Galloway, and known by that name. The former the smallest and most hardy breed known in this island [Great Britain], and apparently the same with that of the more northern countries, may be seen at this day in its original purity, no motive existing for crossing a breed so perfectly adapted to the severity of the climate and scarcity of keep. The original polled cattle were of the same colors, but more varied, and considerably larger in size.

"Amongst the common run of Galloway cattle, we sometimes find them white faced and pied, with small, grizly horns, undoubtedly from a mixture with Dutch or English Short Horns; but this cross is said to detract twenty per cent. from the worth of a beast. As to form, the true Galloways are broad and square in the shoulders, long and round bodied, yet deep, straight and broad on the back, with a thick, shaggy coat; the legs of middling length, with large feet."—[*Lawrence's Treatise on Cattle, pp.* 62, 68.

The *British Husbandry*, Vol. III., under the head of "Reports of Select Farms," gives the report of the "Netherby Farm," in the county of Cumberland, a hilly and mountainous district. The report, which was drawn up by the superintendent of the farm, states that the Galloways are the stock preferred there, after repeated

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trials with several other breeds, including the best of Improved Short Horns, "*of the stock of the Messrs. Colling, and other celebrated breeders.*" Of the Galloways, it is said: "They possess many advantages, as they can at any time be brought to market. Their hardy and very healthy habits, fit them well for the climate and soils of Cumberland; and although the cross with the Short Horns does produce a good beast, no good breeder would choose to continue his stock from these crosses."—[*Page* 56.

Mr. Stephenson Scott, of Washington, D. C., a gentleman distinguished for his knowledge of stock, and author of a series of interesting letters with the signature of "Albion," published in the *American Farmer* twenty-four years since, has spoken highly of the Galloway cattle in a communication headed "Provisions for Exportation," published in the Report of the Commissioner of Patents for 1844. Mr. Scott had been a breeder of Hereford's, a breed to which he gives the preference over any of the *English* breeds, as *beef cattle;* but in concluding his article, he observes: "I am inclined to think that some of the Scotch cattle are better calculated for our country, than any of the very large English breeds, and particularly the best polled or Galloway cattle. They, like their countrymen, are hardy and thrive almost everywhere; and these cattle are large enough for all purposes and pastures."

The flesh of the Galloways is of very fine quality, and is only equalled in this respect by the Kyloes or West-Highlanders; the beef of these two breeds always commanding a higher price per pound in the English markets than that of any others. Culley, who wrote in 1785, observes in reference to the Galloways, "few or no cattle sell so high in Smithfield market, being such nice cutters up, and laying the fat upon the most valuable parts; and this is a great excellence in all feeding cattle. It is no uncommon thing in this refined market, to see one of these little bullocks outsell a coarse Lincolnshire ox, though the latter may be the heaviest by several stones weight. I was told by a Lincolnshire grazier, that a Lincolnshire bullock and a Scotch bullock, sent from the same village to Smithfield at the same time, were sold for exactly the same money, though the Scot was only half the other's weight."—[*Observations on Live Stock, pp.* 24, 25.

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The trade in stock from Galloway has been very extensive for 150 years, large numbers of cattle being annually sent to the English market. Prof. Low says, "It is computed that upwards of 20,000 head are annually exported from the district, from 16,000 to 18,000 of which are sold at Smithfield. Their average dead weight at three years old, may be reckoned at 45 stones, of 14 lbs. to the stone, [or 630 lbs.;] and those sent to London, weigh from 55 to 60 stones, [or 770 to 840 lbs."]

The leading excellencies of the Galloways, as will be inferred from what has already been said, consist in their superior value as fattening stock. The cows do not yield a large quantity of milk, but it is very rich and affords a comparatively large proportion of butter, which is of the finest quality. Youatt calculates that a cow may average "six or eight quarts per day, during the five summer months, after feeding her calf," and that during the next four months she may give half that quantity, running dry the remaining three months of the year. According to this, we may assume that the average for the first five months, would be seven quarts per day, and for the next four months, three and a half quarts per day; which would give as an annual product 1,470 quarts, besides supporting the calf.

According to some experiments made on the milk of cows of different breeds at the "Crown Estate," at King William's Town, Ireland, a summary of which was published in the *Journal of the Royal Agricultural Society*, Vol. iv, pp. 435, 436, it appears that an average of nine and a half quarts of the milk of the Galloways, produced a pound of butter. This would give, as the average annual product from the quantity of milk above mentioned, 154 pounds of butter, an amount which is believed to be far greater than the average product of the cows of this State, and exceeded by but comparatively few dairies in this country. But this average product for the Galloways, is for the milk they yield *besides supporting the calf;* and to give something of an idea of the quantity which is used for this purpose, it is proper to refer to the accounts which describe the manner of rearing calves in Galloway.

"The calves are reared in a manner peculiar to Galloway. From the time they are dropped, they are permitted to suck the mother,

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more or less, as long as she gives milk. During the first four or five months, they are allowed morning and evening a liberal supply; generally more than half of the milk of the cow. The dairy-maid takes the teats on one side, while the calf draws it at the same time, and exclusively, from the other side. When the calf begins to graze a little, the milk is abridged by allowing the calf to suck only a shorter time, and he is turned upon the best grass upon the farm. In winter he is uniformly housed during the night, and fed upon hay with a few turneps or potatoes; for the breeder knows that if he is neglected or stinted in his food during the first fifteen months, he does not attain his natural size, nor does he feed so well afterwards."—[*British Cattle, p.* 159.

When it is recollected that *half the milk* of the Galloway cow for four or five months after calving, is taken for the support of the calf, the quantity she must afford in the year is far from being small, and a fair estimate for the quantity of butter which all her milk would yield in the year, could not be less than 200 pounds, a quantity only equalled by our best dairies, with the best management. It should be borne in mind, too, that they are a hardy breed, adapted to, and generally bred in a rough, exposed, and not fertile country. Therefore, upon a fair view of the case, the conclusion must be adopted, that no breed, fitted for such a situation, would do better, even for dairy purposes, and but few or none so well, regarding all the qualities on which the profits of cattle so placed must depend.

The beautiful engraving introduced at the commencement of this article, is the portrait of a four years old Galloway bull belonging to the Duke of Buccleugh, which obtained the first prize of thirty sovereigns, at the show of the Highland and Agricultural Society of Scotland in 1845. The plate originally appeared in the (London) *Farmers' Magazine.*

To render the description of the breed more complete, a portrait of a Galloway heifer is here given, taken from the *Complete Grazier.* The fine symmetry of the animals, especially the roundness of the carcass and the evenness with which the flesh is laid on, to-

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gether with the general appearance of great constitutional vigor, are well shown in the cuts.

Galloway Cow.

From the characteristics of this breed of cattle as above given, there can be no doubt that they would be well adapted to a large portion of this country. There are many situations where cattle are reared principally for slaughter, and there is every reason to believe that in such situations, the Galloways would be found far more profitable than the stock now kept. A gentleman, distinguished for his knowledge of stock, who went to England a few years since for the purpose of making selections for a cattle-importing company, stated to the writer, that had his object been to procure animals for the northern States, he should have chosen the Galloways and West-Highlanders.

Beef must be considered the chief article derived from cattle in our country. Whatever may be the other purposes for which stock is kept, beef is the ultimate product. The milch cow and the working ox come to this at last. The fattening qualities should, therefore, be duly regarded in all cattle.

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There are no statistics from which to ascertain the number and value of cattle annually slaughtered in the United States, and an accurate estimate cannot, therefore, be made. Perhaps, however, a few remarks on this point may be useful.

According to the returns of the Brighton market, near Boston, Mass., there were sold, in 1846, at that market, 38,670 head of beef cattle, the estimated value of which was $1,198,770. It may be safely estimated that at each of the live stock markets of the cities of New-York, Philadelphia and Baltimore, there is an equal number of beef cattle annually required. Assuming this, and we have for these four cities, 154,680 head, making an aggregate annual value of $4,795,080. From this calculation, an estimate for the United States could not fall short of *ten to twelve millions of dollars*, as the value of the beef annually consumed.

There is a large portion of this State, as well as of the country generally, where it is believed the Galloways or West-Highlanders could not fail of being a great acquisition. In all the mountainous and hilly country, through our southern tier of counties, and along the Allegany range, from this State to Georgia, there are, according to the representations of veracious individuals, numerous tracts, more or less extensive, well suited to the production of grass, and which might be occupied to good advantage for grazing, provided a breed of cattle could be obtained, whose characteristics would adapt them to the region; whose constitutional hardiness and other qualities would enable them to live and thrive under the climate and circumstances belonging to such a location. Are not these Scotch cattle just the stock which is required? And is it not important that a trial should be made with them? To what better purpose could the New-York State Agricultural Society devote a portion of its funds, than in introducing, or causing to be introduced, these valuable breeds of cattle? A similar society in Massachusetts has, within the last few years, expended a considerable sum for the purpose of introducing from England and Scotland, stock which it is believed will prove valuable in improving the milch cows and working oxen of that State. But without intending to depreciate the value of other breeds which have been imported to this country, it

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may, judging from descriptions given by the best authorities, and from well-established facts, be safely affirmed that none would be of greater value to the country than the Galloways and West-Highlanders.

During the past season, having seen frequently the breed of cattle described by Mr. Howard, in the foregoing article, I most heartily concur in his remarks in relation to their value and adaptation to many portions of this State, as well as the northern States generally. In the southern tier of counties they would prove, I have no doubt, a most valuable breed. Their aptness to fatten is such, that they would, at comparatively little expense, be fitted for market, and the superiority of their beef is a matter well understood by every one acquainted with the London markets; and if introduced here, they would doubtless be equally popular.

I was asked by a distinguished breeder in this State, which, among the various breed of cattle in England, I considered best adapted to the northern States. I answered him, that if it was left to me to select a breed, I should have no hesitation in the choice of the Galloways and West-Highlanders. Such is my opinion, founded upon a careful examination of the different breeds in England, all of which I had an opportunity of seeing in their perfection. The expense of their feed, their aptness to fatten, the superior quality of their beef, render them, in my judgment, deserving the attention of those who have good grazing lands and are engaged in the raising of stock for market.

I hope some of our spirited agriculturists, who have the means and are desirous of advancing the interests of the farmer, will be induced to import some of these animals, and let our farmers have the opportunity of judging of their merits, and I shall be greatly mistaken if they do not commend themselves to every one as peculiarly adapted to our grazing districts.

B. P. J.

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SOILING.

By R. L. Pell, Pelham Farm, Ulster county.

The Cow.

For the last four years it has been my constant practice to soil, not only cows, but hogs, oxen and horses. My yards are large, enclosed by stone walls, and so arranged as to collect all the manure in the centre. There is a pump and trough convenient to it, and open sheds where the animals may lie and ruminate at pleasure. Three times each day, at stated hours, green crops are cut and brought to them, such as clover and timothy grass, green oats, green corn stalks, green buckwheat in bloom, root tops, &c. Occasionally, by way of change, dry hay and straw are cut up and given to them, mixed with sufficient wheat bran to induce them to relish it. The stock are never permitted to waste anything; that left by the cows is given to the horses, as horses will eat after cows, and vice versa, cows after horses; but they will not eat after each other. The leavings of the horses is then fed to the hogs. The animals are enabled to consume their quantum in about thirty minutes, when they immediately lie down, rest, take on fat, and secrete milk. If pastured, they require many hours to obtain the requisite food, besides laboring diligently, which has a tendency to prevent the secretions, either of fat or milk. They have but little time to ruminate; and when driven to and from pasture, run wildly about the field; are whipped, stoned, and chased by dogs, which causes them to become feverish, and, as a result, contract their milk vessels.

Salt should always be within reach of the animals in the yard, as it is indispensable to keep the organs of digestion active, increase the milk and growth of fat; and it much improves the quality of the flesh.

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I have found, by actual experiment, that cows, when fed in the yard at regular periods, with a change of food, not allowing them at any time to be overfed, and supplied at all times with an abundance of water, have doubled their milk; that is to say, the same cows that were one year depastured gave, when confined, twice the quantity of milk, and of a much richer quality. When depastured, I did not obtain a particle of manure; it was dropped upon the soil, certainly, but with very little advantage to it; nearly all the volatile gases were immediately given to the atmosphere, and many of its other valuable properties were withdrawn from it by flies; so that the soil received but little benefit. One of the principal and most valuable ingredients in manure is ammonia, which is converted to a volatile substance in farm-yard manure, called nitrogen, and is, of all others, the fertilizer that must, if possible, be saved, as neither seeds nor plants can be produced without it. The manure dropped in the field is deprived immediately of this indispensable gas. The potash and soda also being easily dissolved by water, are likewise practically lost, by being deposited in excess. In the barnyard yard these valuable substances may be preserved by means of charcoal dust, which absorbs the ammonia as it rises to escape, and the potash as it dissolves, by absorption, and holds them until saturated with rain, when the gases are again disseminated in the heap, and the charcoal takes in moisture. This manure may then be placed on fields in large or small quantities, as required, and in such a manner as to produce the most advantage. An opportunity is afforded likewise, of making any description of manure needed. If highly nitrogenized substances are required for crops, allow the hogs to run in the barn-yard, and feed them corn; it contains valuable nutritious elements, suitable not only to the growth of plants, but the animals themselves, being composed of nitrogen, potash, carbon, soda, lime, and other necessary chemicals, all of which, after having formed the bones, flesh, fat, skin, hair and muscles of the animal, are finally returned to the manure heap in lesser quantities. The value of the manure may be farther increased by feeding oats, rye, peas, buckwheat, cut straw, &c.

One reason that the excrement of the horse is so much richer and more valuable than that of the cow is, that the horse is fed on farinaceous matter, corn, oats, &c., which the cow is not; and so like-

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wise is that of man, because he partakes of a great variety of food, both animal and vegetable. My barn-yard has yielded me a large amount of manure per annum, since I commenced soiling my stock; whereas, before, I did not obtain a single load, except in winter. The plan I adopt is, to cast daily all the refuse of the farm into the yard; such as weeds, muck, leaves, refuse straw, sods from the hedge rows, pond mud, refuse vegetables, and numerous other substances that might be named; the hogs turn them over and incorporate them one with another, and the stock trample down and form them into a solid mass; charcoal dust is once a week spread over the whole which retains and preserves all the gases that would otherwise escape; every three months it is drawn out, placed in a square heap, and mixed with plaster, ashes, salt, muck, and guano; the whole is then covered with charcoal dust to the depth of six inches, and left until fall, when it is used upon the fields most requiring it; spread on broad cast, and plowed under the earth, and the crops make use of the gases as nature provides, and all care ceases.

Another most important advantage accrues to the soiler, viz: a piece of land that would support five cows, depastured one week, would amply furnish the same with an abundant supply of food one month, if cut and carried to them. The piece depastured would likewise be almost destroyed by poaching in wet weather, trampling, sleeping upon, and injury to the herbage by close eating. Horses do much more damage than cows, as they eat much closer, and frequently pull the grass out by the roots.

When cattle are stall-fed, or soiled in the yard, the nitrogen of the manure may be preserved by artificial means. It is an ingredient absolutely indispensable to the growth of plants. By anaylsis it has been found in every part of the growing plant; the roots, stems, leaves, &c., contain it, showing that without it plants cannot be grown. How important then is it, that so valuable a substance should be preserved. I have grown plants in pure charcoal dust, by watering them with rain water; the rain water yielded them ammonia, and consequently nitrogen as one of its elements. I found with spring water, I could not grow them after a certain period at all in charcoal dust; but with rain water most successfully. Al-

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though the air must contain a vast quantity of nitrogen, I am confident the plants I grew, did not obtain the quantity they required from that source; if they had, the spring water would have answered them as well as the rain water; they must have obtained it through the medium of ammonia contained in the rain water. This is a singular fact, and goes to show that although a generation of more than one thousand millions of the children of Adam, and 20,000 millions of animals cease to exist, and the nitrogen which they contain, is yielded in part to the air of heaven every thirty years, still plants cannot elaborate it in their system, except through the medium of their roots. The hydrogen unites with the nitrogen, afforded, not only by dead animals, but by the excrement and urine of all animals while living, as well as other putrescent matter; thus forming ammonia, which combines with carbonic acid gas, and descends with every shower to the earth's surface, in a soluble form, easily taken up by the roots, and distributed throughout the plant. Davy calculates, that if a pint of rain water contain only a quarter of a grain of ammonia, a field of forty thousand square feet must receive yearly upwards of eighty pounds of ammonia, or sixty-five pounds of nitrogen; for it is ascertained that the annual fall of rain water in England, on this extent of surface, is at least 2,500,000 pounds. This is much more nitrogen than is contained in the form of vegetable albumen and gluten in 2,800 lbs. of hay, or 20,000 lbs. of beet root, which would be the yearly produce of such a field; but it is less than the straw, roots, and grain of corn, which might grow on the same surface, would contain; therefore, the farmer must supply the deficiency of nitrogen by using manures containing ammonia.

Animal manure is chiefly valuable for the ammonia which it produces. Without it, fodder for animals, or vegetables and grain for man, cannot be grown. Manure without stint with nitrogenized substances, and the wheat grown will yield 18 per cent. of gluten, will weigh 64 lbs., and produce 50 bushels to the acre. Such has been the result of an experiment I tried upon a wheat field, when the adjoining field, treated in the usual manner, yielded me wheat weighing 56 pounds, and 15 bushels to the acre, and probably not more than five per cent. of gluten. I placed some of the same nitrogenized composition upon a barren piece of sandy land, which I had never seen

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covered with verdure of any description, and in a very short period of time, it was clothed with a dense dark green grass, which tillered well. White clover afterwards came in, (which, when it dies, affords food for a succession of plants) and the piece may be considered as reclaimed.

All lands require humus or decayed vegetable matter. When soiling cattle is practiced, an opportunity is offered of supplying the farm with whatever it may require. If, upon examination, humus is discovered to a great degree deficient, cart decayed oak wood, and mix it with your compost heap. Each pound brought in, will absorb from the atmosphere more than 70 times its volume of gaseous ammonia; consequently the quantity of nitrogen will be large. Charcoal possesses the same valuable property in a greater degree. Chemists inform us, that it will absorb 90 times its volume of ammoniacal gas. Twice a week a thin coat of charcoal should be spread over every barn-yard and compost heap. It will richly pay the expense. Muck will, to a certain extent, answer the same purpose. "Lord Egremont, of Sussex, England, used to have his cows tied up during the greater part of the year; he maintained that one-third of the food was saved, that his cows were fed with one-fourth part of the usual trouble, that more dung was made, and that there was no spoiling the ground. He stated that little more than half an acre may be made to produce grass sufficient, when cut and brought in to the stable, to keep a cow nearly a whole year [in England]."

Cows and oxen, as ordinarily treated, are much hardier than horses, and not half as liable to disease. They will endure without apparent suffering, extreme cold in winter, and intense heat in summer; they will bear confinement in stables, without much apparent detriment to their health, for 18 months. I saw a milch cow in Geneva, Switzerland, which had been confined to a stable for two years; her owner informed me, that during that period, she had not been out more than ten times, and then only for an hour or so. She had never been sick, and was a great milker. When I saw her, she appeared to enjoy good health; her toes had grown very long. I found, upon inquiry, that the persons living in the vicinity of towns, not only in Switzerland, but Germany and England, who made milk-selling their business, were accustomed to keep their cows in

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confinement the year round, without injury to their health. I imagine the same thing is practiced in the outskirts of the city of New-York.

It would not be possible to keep the horse in the same manner, without exercise, and he retain his health; plainly showing that the cow is much hardier in this respect. Still I much prefer that cattle should have a large yard to exercise in, and enjoy the air.

My cows, during winter, have each a separate stall, in which they are fastened every night. In the morning, they are curried, brushed and fed, after which they are turned in the yard, and left there during the day. The only people in Europe who generally keep their cow houses cleanly, are the Hollanders. Their cow houses are so neat, that a person not over nice, might dine in them without much offending his olfactory nerves; they are universally airy, remarkably well ventilated, and perfectly protected from too great a glare of light, which is found to disturb cattle when ruminating, and to encourage the annoying little fly.

In England such is not the case among the same class of farmers. Their cow houses are badly constructed, exceedingly dark, and not sufficiently ventilated. In our country the same class have no cow houses at all. Their cattle generally do not know any other luxury, than to be allowed to stand on the south side of a barn during four months in the year. Before their stable doors may be seen large piles of horse manure, scarcely allowing space for egress or ingress; the centre of which, if opened, will be found burned to a dry white powder, and is termed fire fanged. I could name four farmers, living in one of our most celebrated agricultural counties, who have absolutely moved their barns from their manure heaps, instead of their manure heaps from their barns. Two of these gentlemen have long talked of removing west, on account of the sterility of the soil.

Let stock be soiled generously, and the value of their manure is in proportion to their feed. He who feeds oil cake, wheat bran, clover, and lucerne grass, will obtain a manure exceedingly rich, and worth double that derived from animals fed upon straw and chaff. In the former case, his animals will yield a large quantity of milk; it will

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be rich, and afford cream capable of making the best butter, or the milk itself will make the richest cheese. In the fall of the year the cows will be fat, and fit for the butcher. In the latter case his manure is comparatively worthless; he obtains a small quantity of their milk, incapable of producing either much or rich butter or cheese, and his animals are mere shadows. The only question as to rich food for cows will be, can it be given advantageously? and this will depend upon the use to be made of the produce, upon situation, markets, and circumstances.

As no plant can use other than liquid manure in its growth, farmers should be particularly careful of the liquids of their barn-yards. Every barn-yard should have the requisite cisterns or pit holes, into which all the manure made should be thrown daily. When full, let it remain one month to become soluble, after which apply it to your land and plow it under. If left on the surface, exposed to the drying influences of wind, or the scorching sun, great waste necessarily ensues.

Although I would advise farmers to soil their stock, still I would not keep a single animal expressly for its manure, as hundreds do in England. The manure should be a clear profit; and it can only be so, by making horses and oxen perform sufficient labor to pay for their food, and the money expended upon them. When cattle are fattened, their manure, by being enriched by the corn, &c., fed, should likewise be a clear gain. The fodder and trouble must be repaid by the increased value of the beast. If the value of the food used for stock is found to be balanced by the labor and use of the stock, the manure may then be considered clear gain.

The value of manures differs on different soils, so that if 100 farmers were to reckon the value of manures used by them on different soils, all using the same kind, very possibly no two of them would agree.

When pigs are soiled, their manure should always be mixed with that of the stable or barn-yard, before used, for the reason that it contains a large percentage of nitrogenized substances, especially when they are fed corn and other cereal grains. If allowed to putrify in the pens, it becomes excessively offensive, and if in that

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state it is applied to esculent roots, it would give them an unpleasant flavor. If properly managed, it is a most powerful manure. A gentleman formerly residing on Long Island (Mr. Samuel Stevens, deceased,) once informed me that he had applied pure hog manure to a field of wheat. The grain grew most rapidly, presented a beautiful green appearance, and was admired by all who saw it. When it reached the usual height of wheat, it was still green, and showed no inclination to form the tassel. It did not cease to grow until it was one-third higher than any wheat grown on his farm before; and at that stage the straw ripened, but hardly yielded a single kernel of grain.

The excrement not only of the hog, but all animals, differs very materially in value for agricultural purposes. Of the dung of horned animals, I would prefer that made by the ox, to that of young stock, for the reason that the latter require all the phosphate of lime yielded them by their food for the formation of their bones, and cows convert the most of their phosphates into milk. The ox requiring but a very small quantity, and none to make fat, enriches his excrement with that invaluable substance. If Mr. Stevens had mixed his hog manure with that of the ox, containing phosphate of lime or bone earth, and applied it in less quantities, his wheat would have produced him a large quantity of grain.

Plants and animals require the same ingredients to induce growth and bring them to maturity. Professor Liebig says, "that caseine, "albumen and fibrine, which have hitherto been considered the pro- "duction of animal life, are now ascertained to be previously form- "ed by plants, as well as starch and sugar, and are all assimilated "and modified by the animal functions. The three first substances "have been by the chemist extracted from plants, and their analysis "is precisely similar to those yielded by animals."

I have heard farmers object to soiling, for the reason that they imagined frequent cutting of meadows had a tendency to exhaust the soil, and would injure it more than depasturing. I have found by actual experiment that such is not the fact. You may mow a field ten times during the summer, and the injury will not be as great as it would to cut one crop of hay, to say nothing about the manifest destruction of roots, by poaching, &c. You injure grass

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but little by constant mowing, provided you do not permit it to go to stalks and seed. It is the formation of stalks and seed that exhausts the humus, and other valuable ingredients in the soil. If you remove the grass before the seed is developed, but little injury will accrue to the land. It is necessary that the agriculturist should draw upon his lands sufficient manure to keep the humus in his soil always the same. If he does this, his land will yield him a crop of grass annually for a term of years.

Should meadows be so located as to allow them to be overflowed, it will be unnecessary ever to manure them, as they will appropriate to themselves from the slime contained in the water, the enriching properties requisite to grow grass crops continually. Without irrigation in the southern parts of Italy and France, fine crops of grass cannot be raised. In the neighborhood of Avignon in France, they find it necessary to irrigate even their potatoe fields. The inhabitants of Tuscany irrigate all their crops, wheat, beans, &c. The inhabitants of this country never irrigate, whatever their facilities may be.

I think farmers err in laying *too great* a stress upon the necessity of importing foreign stock *for dairy purposes.* It has no doubt been found by many importers, who have experimented fairly, that our *improved* native cow gives as much milk the year round, yields as much cheese and butter, stands the climate better, and is kept at as little expense, as any of the imported cows in the same condition. At all events, if such has not been the experience of others, it has been mine. The apparent supposition upon which importers act, is, that they suppose an extra high priced imported animal, must necessarily produce a superior stock, when it not unfrequently happens that those very animals, by injudicious selection, have but few good points. Their imperfections are disseminated through a whole neighborhood, merely because they cost an exorbitant sum, and enjoy the reputation of having crossed the Atlantic. This, of course, does not always happen. Probably some of the finest animals, of the Devon, Hereford, and Short Horn breeds, that have ever graced the shores of Britain, have been brought to this country, and we have most assuredly improved the form and beauty of our animals by frequent crossing. Still an approach to the same result

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would have been obtained, if our farmers had paid the same attention to our native stock that they do to the foreign. The usual practice is, and I fear always will be, to sell the best to the butcher, for the reason that it bears the highest price, and breed from the inferior. Such policy will inevitably deteriorate stock, and disgrace our farmers, though they may own the finest imported animals. I approve highly of the Short Horn cross, for animals intended for beef, but as far as my experience goes, not for milk, except perhaps in a slight degree. I have owned a Short Horn cow which yielded me 30 quarts of milk per day, and a native which only gave 20 quarts. Still the native cow's milk was certainly one-half richer than the Short Horns, and consequently worth twice as much. All things considered, I think the most admirable animals for the climate of America, are the animals raised in America.

Feed animals well. Never stint them while young; if you do, be assured that they will never afterwards take on flesh, and grow so rapidly or so fully, no matter how well fed at an advanced age. Of course, a serious loss will accrue. The farmer who spends the most money in food for his animals, will realize the greatest profit, provided he makes a judicious selection of stock and his markets are favorable.

A breeder of cattle can always choose from his herd, without a possibility of error, such animals as will fatten advantageously. His guide is symmetry in form, a wide-spreading carcass, small bones, compact body, very deep quarters, thin skin, full dilating eyes, fine brisket, small head, mild countenance, thin muzzle, distended nostrils, wide shoulders, wide back, round body, short legs some distance apart, full flanks, and a fatty excresence under the roots of the tongue. When the breeder has selected such an animal, he is confident that any amount of food he may eat, will amply repay in prime flesh, if the handling of the animal be good.

The Horse.

Hitherto I have confined myself to milch cows. I propose now to treat of soiling as applied to horses. It may be thought that I lay too great stress on the importance of soiling; but I think the day is not far distant, when all will soil animals, if not from choice,

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from necessity, as the value of land is daily increasing in the vicinity of our cities, and it will soon be found that agricultural pursuits will not afford remunerating profits to the farmer, who fences 100 acres in 10 acre fields, for the purpose of keeping 10 milch cows, when 15 acres, properly tilled, will keep the same in much finer condition.

It is well to recollect that there are but four elements which are considered principally concerned in producing food for animals, and they are nitrogen, hydrogen, oxygen, and carbon. Chemists say that "no animal can subsist for any length of time upon food destitute of nitrogen," and that a mixture of different food is absolutely necessary to the well-being of all kinds of stock. And I would impress upon all those who now soil animals, or who may hereafter do so, the absolute and indispensable necessity of an ample supply of water, which, although it is not nutritious in itself, still is all-important as a dissolver of the nutritive matter which is fed to animals, rendering it fit for the absorbents to convey it into the blood. By analysis it is found, if a horse be fed 1,000 parts of the common bean, he obtains from it 570 parts of soluble nutritive matter, 426 parts of mucilage or starch, and 103 parts of gluten. If dry peas be fed, he obtains from 1,000 parts 574 parts of nutritive matter, 501 parts of mucilage or starch, 22 parts of saccharine matter or sugar, and 35 parts of gluten; from 1,000 parts of linseed cake, 151 parts of nutritive matter, 123 of starch, 11 of saccharine matter, and 17 of gluten. From 1,000 parts of red beet, 148 parts of nutritive matter, 14 mucilage or starch, 120 saccharine matter, and 14 of gluten. In 1,000 parts of parsneps, cabbage, Sweedish turneps, common turneps, red clover, white clover or lucerne, the quantity of nutritious matter is very far less; but from 1,000 parts of oats he obtains 743 parts of soluble nutritive matter, 641 of starch or mucilage, 15 of saccharine matter or sugar, and 87 parts of gluten or albumen, showing that oats, as food, are far more valuable than the root crops. Therefore my practice has been to keep my horses according to the labor I have for them to perform. When idle, they are fed upon green corn stalks, green grass, carrots, potatoes, bran, or fresh unfermented apple pumice, all of which they will partake of, as a change, with apparent satisfaction. When they

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are compelled to labor hard, they are fed the best cut hay, and 12 quarts of oats each per day; being taken from the green succulent food, their oats are a great treat to them, and I believe do them infinitely more good than if they had been fed constantly upon them. I have sometimes fed my horses cut straw and boiled potatoes, but found, without oats, they could not, on such food, do a day's work, but although allowed as much as requisite, constantly fell off in condition; still Messrs. Vancouver and Arthur Young, of Essex, England, affirm that horses have been kept throughout the winter entirely on steamed potatoes, to every 300 lbs. of which was added half a pint of salt, and a little sulphur; and that, fed in this manner, they performed with the greatest ease, all the common labor of the farm, without either hay or oats. If such is the case in the mild climate of England, it has not been my good fortune to find that it would succeed in ours. I have found by frequent experiment that the carrot may be fed very advantageously to working horses; so much so that a horse will gain rapidly, if fed twice a day with oats, say four quarts at each meal, and an equivalent of six quarts of carrots. The saving in one month, of oats, by this mode of feeding, is considerable. Horses fed on carrots alone, will consume thirty bushels in one week; when so fed, the tops should be cut off, and given to cows; they are tender and very delicate. Cows are extravagantly fond of them, and will eat them in preference to any other food. An acre well cultivated will grow 1,000 bushels of carrots, and yield about eight tons of green tops. As the carrot is a root depending mainly upon the soil for nourishment, the tops may be cut with a scythe, and fed before the roots are dug; they are very hardy, require but little attention, bear neglect for half the winter in the fields unprotected, which admirably suits a slovenly farmer (they should, however, be dug and stored by the first of November). Horses fed on carrots present a beautiful glossy coat. It is a crop almost indispensable to a man who practices soiling. The parsnep, mangel-wurzel, turnep, and potato, are likewise very valuable, but in my estimation not so much so as the carrot.

In changing the food of my horses from green to dry, and vice versa, I am particularly careful in seeing that it is done by degrees, as on one or two occasions I have noticed that an *immediate* change

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has produced hoven in cattle, though I have not observed any ill effects in horses. Still, I think it best to break off gradually. If for instance you are feeding corn, add green food a short time before you intend to make the change, and increase it constantly while you diminish the corn. Horses. when soiled, should be fed in small quantities, and often. An immense advantage gained in soiling horses is, that you have them always at hand when required for labor, and not having enjoyed leisure in the fields, they never show any indisposition to render themselves useful; the time lost in catching them when required, is frequently severely felt by the farmer. I have known half a day consumed in this way, by a hard working man, and all his farm help. Still, as his grand-father never soiled his horses, he would not, but contented himself by swearing the horse should never go unhoppled again. Hoppling is a result of pasturing. It is a bad practice, and ruinous to the gait of any animal, besides rendering him incapable of defending himself properly from the flies; the consequence is, he becomes poor in flesh, and a disgrace to his hard-hearted stubborn master.

If the farmer will not *take my advice* and soil his horses constantly, for his own advantage, he should do it partially. He should cut grass for them during the day, and turn them into some well clothed meadow at night. Thus they will escape the detestable fly, and enjoy some quiet and ease, and be enabled to select grasses more congenial to their tastes, than those he had cut for them. In the agricultural report for Essex in England, it is said, that two horses have been supported during four months upon a quarter of an acre of lucerne, with scarcely anything given to them besides; and that six horses, at hard work, have been kept on lucerne, instead of hay, but with an allowance of oats and cut straw for twelve weeks; six from the first cut, four from the second, and two from the third: which, valuing the hay saved at six shillings per horse per week, would amount to $36. A paper in the communications to the Board of agriculture in England, states, that in one year, 23 horses have been kept 20 weeks, and in the next, 28 horses during 18 weeks, upon eleven acres alone; which gives an average of three roods per horse in nineteen weeks. An ordinary sized cart horse could consume easily 100 lbs. of green food of any kind in one day,

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and a small allowance of oats, say two quarts. If the same horse was allowed to run over a three acre field, he would probably destroy three hundred pounds of food, while obtaining one hundred. I have found that a square rod of ground, covered with a luxuriant crop of grass, is sufficient to last a horse one day, with a small quantity of oats.

The English cavalry allow their horses in barracks 12 pounds of hay and 10 pounds of oats per day, on which, they say, they are kept in high condition. I cannot imagine it possible, as in 1,000 parts of the best grass, there are only 82 parts of soluble nutritive matter, 72 parts of mucilage or starch, 4 parts of saccharine matter, and 6 parts of insoluble matter. If the cavalry horses stood still, I should imagine that quantity of food might be sufficient, as inactive horses require much less food than horses that are employed. The bodies of horses are all the time wasting, and the waste is proportioned to the activity of the animal; therefore the working horse requires nourishment proportional to the waste of his body. A horse soiled will consume as much food as 8 sheep: a cow in milk as much food as 12 sheep: an ox when fattening, as much food as 10 sheep: a calf as much food as 2 sheep.

When you go upon a farm, and find the farmers horses looking plump, well formed, high spirited, and powerful, you are apt to say at once, that horse must have come from prime stock; whereas the credit is entirely due to the farmer, as you may take an animal bred from the best stock in existence, and if allowed by the farmer to suffer deprivation of proper food, he will never become perfectly developed, either in bulk or proportion. He will never be free from disease, and will not have any constitution. The same rule will apply to all kinds of animals, whether man or beast. When, therefore, you find on a man's farm, fine stock, well proportioned, and of the standard size, you must award him the credit, and not the breed. You may take an animal of the most inferior kind, and by judicious use of nutritive food, make him attain great size; for examples, look at our monstrous hogs, made sometimes to weigh 1,100 lbs.; our immense prize oxen which have reached more than 3,000 lbs., the parents of which are frequently moderate in size. Who will say this degree of perfection was not produced by the farmer.

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It is from artificial feeding that our markets are supplied the year round with fine beef, pork, calves and sheep, and the same farmers who now raise these animals in open fields, could, by soiling them, add 20 per cent. to their profits, provided the crops they raise for the purpose are supplied, while growing, with proper nutriment, from which they can assimilate organic or inorganic matter. The animal derives his strength, his growth, and his bulk from the sustenance afforded by these crops. From every 1,000 parts of gluten a horse consumes in his food, he receives 557 parts of carbon, 78 parts of hydrogen, 220 parts of oxygen, and 145 parts of nitrogen. By manuring his crops with highly nitrogenized substances, the farmer adds vastly to the amount of gluten. If horses be kept fat in winter, their bones and muscles will be defended against cold, and the acids of aliments will be so tempered, as to strengthen and maintain their whole frame. Let it be remembered that the horse is a native of warm climates, and do not, as is usual among farmers in our northern States, turn them out in the barn-yard to obtain a scanty allowance of poor coarse food during the winter. They are liable to numerous diseases which are not unfrequently brought on by such injudicious and cruel management. When once diseased, it is almost impossible to find out what that disease is, as his structure is amazingly complicated. There are but two indications showing internal disorder; the one is an indisposition to work, and the other a refusal to eat. When either of these signs are manifest, you must at once let the animal rest, and search for his disorder, and on no account compel him to labor. Soil your horses, feed them during winter on a variety of food, such as oats ground and whole, bran, ship stuff, beans, peas, turneps, carrots, potatoes and parsneps, occasionally steamed separately, and together. In summer, keep them always confined in airy stables, and feed them clover, rye grass, bruised grains, green corn stalks, cider pumice, oil cake, hay, &c. Be particular to give them three-fourths of a pound of salt per week, occasionally 2 oz. of sulphur, and frequently 2 oz. of wood ashes. By good keep and judicious management, a pair of horses, perfectly sound when young, will last and labor constantly twenty-five years, and to the end will retain their spirits. I have a pair of bay horses on my farm, that are now 20 years old, during which time they have never been depastured, and have work-

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ed daily; they have never been incapacitated for work by lameness, or disease of any kind, and have always been perfectly sound and healthy. If driven through Broadway, New-York city, they would attract general attention. I have another pair of sorrels that are 18 years old, which labor daily, and will do as much work as any pair of six years old in the town in which I reside. Dr. Hosack, when he died, left a horse 28 years old, which I have frequently seen, and which was a very pretty animal, and would have passed for a middle age horse to any casual observer. Mr. Youatt quotes the record of a horse that received a ball in his neck at the battle of Preston, in 1715, which was extracted at his death, in 1758; he was, consequently, more than 43 years old.

I have made the following rules for my own governance:

1st. The stable in which horses are kept should have a southern exposure. The ground ought to slope gradually from it to carry off the moisture. It should be kept perfectly dry, as dampness is exceedingly detrimental to horses, and will engender humorous diseases.

2d. The stable for valuable carriage or race horses, should never contain more than five stalls, and a sixth one ought always to be constructed of greater size for one of them if somewhat indisposed. If particularly sick, he should be removed; as contagion might be imparted to the others. If a stable contains a number of stalls, when five or six horses are on duty, the temperature would be so changed as to endanger the health of those remaining.

3d. The stalls should be five feet six inches wide, and always arranged on one side, instead of being placed opposite to each other with an alley between as is usual, for the reason that horses ought not to breathe each other's breath. The carbonic acid gas exhaled would be detrimental to them, and if one should happen to be diseased, the others might, by constantly inhaling his breath, become infected.

4th. Stone floors should on no acccunt be used in stables, for the reason that they are exceedingly cold, and apt to induce catarrhs, besides being slippery in winter, causing falls, and often injuring limbs. Three inch pine or spruce plank, tongued and grooved

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should be laid perfectly level, after which a slight gradual slope may be planed leading to the centre, where a grating of iron bars, ½ of an inch apart, should be firmly set in a frame so that it may be taken out at pleasure, through which the moisture would pass into a drain under the floor leading into a cistern ; traps must be so constructed in the drains underneath, that the ammonia may not rise ; if it does, and there is no ventilation above for it to escape, the horses will become blind after much exposure.

5th. The stable must be airy, and to make it so, there should be a window at either end, covered with copper wire cloth, which will not rust and corrode, and a ventilator above to carry off as it ascends the impure air, which, being lighter than the atmosphere, immediately rises to the ceiling, and will at once escape if an opportunity is afforded it. If there is danger of too much air being admitted by the windows, the bottom of the stable door may be latticed with the slope turned upwards, and covered with copper wire cloth, which will cause the unwholesome gases to rise immediately to the ventilator. Five horses will, in a very few hours, destroy the vital principle of air in a confined, close stable. The carbonic acid gas ejected from their lungs, is a deadly poison, and totally unfit to be again received by respiration. It is not only their breath that must be avoided in stables, but the exhalations continuously arising from their bodies. It should be generally understood that pure air is as necessary to horses as to human beings.

6th. Stables must be kept comparatively speaking light, and of equal temperature ; in summer about 65°, and in winter from 45° to 55°. If this rule is not observed, the horses will suffer with rheumatism, stiff joints, inflammation of the lungs, and numerous other diseases. It should be recollected, that we have no domestic animal existing in a more artificial state than the horse, or one requiring more care and attention. It is very rare that a horse is found useful to man after he is 14 years old, when by observing a few rules, and following them strictly, he may be made to last and labor constantly until 25 years of age.

7th. Never trust your horses to any other than an experienced groom ; let his duties be as follows :

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1st. At day light in the morning, to place hay in the rack, in order that the horse may distend his stomach to the proper proportion before he receives his oats. If oats are first fed, he will satisfy himself with them, and not relish the hay; the consequence will be, he will present a gaunt and half fed appearance during the day, annoying not only the coachman, but the master.

2d. To clean the stable, carry out all the straw litter, separate the dry from the wet, place the wet in the manure heap, and expose the dry in the open air for the ammoniacal gas to escape, and purify it for use as bedding at night; sweep the stable perfectly clean, spread a thin coat of charcoal dust in the stalls, to absorb the ammonia. The usual mode is to roll the wet litter day after day under the manger, and force the horse to inhale the gas arising from it, often entailing disastrous consequences, besides infecting his food, and rendering it unpalatable. Sufficient time having elapsed while the groom was clearing his stable for the animals to consume their hay, he proceeds.

3d. Water the horse, and immediately after give him his usual feed of oats or other grain.

4th. Curry and brush the horse thoroughly, and well rub his legs, in order that the pores of the skin may be opened, the scurf removed to excite insensible perspiration, and the blood caused to circulate freely. Wash his eyes and nostrils with a sponge, to free them of dirt; take out all the sand and dirt that may have become fastened in and under the shoe, and comb his tail and mane. This rule may appear superfluous; still, next to food, it is the most important, and must be insisted upon by the proprietor, if he desires his horse to enjoy health, strength, constitution, and a fine glossy coat. High grooming and exercise fit the racer and trotter for the endurance of the fatigue of their great exploits, and show the importance of care at all times to horses.

If my arguments have not been such as to convince that soiling is by far the best, I will offer a few additional reasons, which may appear more convincing, inasmuch as they are calculated to save thousands of dollars. All are well aware that the most expensive item about a farm, is fencing; nine out of ten of all the farmers in

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our State, and other States throughout the Union, if they are compelled to borrow money at all, borrow it to cover their farms with expensive, and if they soil their cattle, entirely useless fences, for they are of no earthly use except to keep animals within certain bounds, and if they are not permitted to run at large, the only fence required is one surrounding the farm.

In the first place, the material is very expensive.

In the second place, they occupy a great deal of room, which on a rich soil might be advantageously used for agricultural purposes.

In the third place, they prevent the soil from drying rapidly in their vicinity after showers, consequently detering the plowman, when the rest of the field requires his labors.

In the fourth place, the snow in winter drifts against them in large quantities, where it remains piled up very late in the spring, to the annoyance of the farmer.

In the fifth place, they furnish a capital and secure cover for foul weeds, which are rarely eradicated, owing to the labor required, and which spread contagion over the whole field.

In the sixth place, they are resorted to by mice, insects of all kinds, birds, &c., which sally out when the husbandmen are absent, and do inconceivable damage to the growing crop.

In the seventh place, they are excessively in the way of the plow. The headlands of cultivated fields generally, are always rough, full of weeds, and covered with briars.

In the eighth place, if made of ditches, they take up a vast deal of room, are continually filled with partially stagnant water, produce malaria, induce fevers, and not unfrequently render a whole family incompetent to labor.

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CHEMICAL GUANO.

The committee to whom was referred the communication of D. B. Stockholm, Esq., of Ithaca, on the subject of his preparation of "Chemical Guano," respectfully report:

That they have carefully examined the same, and from the statements made and certified by Mr. B. Gifford, consider it a very valuable discovery. The results of the experiments made last season, are truly wonderful, and if on further trial, it should prove equally satisfactory, Mr. Stockholm deserves great credit for the discovery, (provided he makes the discovery known to the public,) and will stand in the enviable position of being a great benefactor to his country, causing "two blades of grass to grow where but one grew before."

As Mr. Stockholm has not divulged the method or materials of which his "Chemical Guano" is composed, your committee cannot form an opinion of its relative value.

It appears from the communication, that enough will be prepared the present winter, to enable farmers to test its qualities by experiments the coming season; we would therefore recommend a further trial before we can express an opinion of its merits or demerits.

C. N. BEMENT,
B. P. JOHNSON.
Committee.

February, 1847.

To the President of the New-York State Agricultural Society.

Sir—After much study, and a few experiments, I have succeeded in compounding a manure, which I call "CHEMICAL GUANO;" and the experiments made with it this season, have proved highly satisfactory.

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For wheat, corn, potatoes, carrots, beets, melons, cucumbers, cabbages, and house plants, it has proved a valuable manure, and I am now preparing it for fifty acres of wheat.

The expense of manuring one acre of wheat, with it where the land is in a good state of cultivation, will not exceed two dollars and fifty cents. It promises fair to prove the most valuable manure ever used in this State; but let me not be understood as saying that it will supercede the necessity of barn yard manure.

Every farmer should make all the manure he can on his own farm, and then use the chemical guano as an auxiliary, and it will prove a powerful one.

My effort is to supply the plant with all it requires as nutriment, except what it obtains from the soil and the air, and my belief is, I have succeeded.

Good and even large crops may be obtained by the aid of the chemical guano alone, without any other manure. Of this I am certain, for I have found it by actual experiment; but it will cost money, and every farmer should avail himself of all the manure within his reach, which will require no such outlay. With barn yard manure, he may prepare properly, some fifteen or twenty acres annually.

With the same manure, with the aid of this guano, he may manure sufficiently twice the quantity of land at a moderate expense; if he wishes to cultivate more, he can resort to the guano alone, and will not find himself disappointed in his expectations of a crop.

On my farm in this county this season, we have produced by the aid of guano alone, (a table spoon full to the hill), in the opinion of competent judges, sixty bushels of shelled corn on the acre: and the corn crop will bear a greater quantity of this guano, as I know from experiment. Corn planted in my garden the 29th of May, which was hoed twice, and liberally manured with the guano alone, produced well, and was out of danger from frost by the last of August. Corn planted in the same garden on the first of July, hoed once, and liberally manured with the guano, had on it on the fifth of September, ears fit to boil. The garden received no other ma-

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nure this season, and but five loads of short barn yard manure the last season; the soil is a gravelly loam. It is believed the corn planted the first of July will ripen.

But in applying this guano to wheat, more caution will be required, lest it should cause too great a growth in the fall. My opinion is, that three bushels will prove enough for an acre; and then it should be sown broadcast about the twentieth of September, not earlier. It may be sown on wheat with advantage in the spring, the earlier the better. But one application of the manure in the fall or spring will be enough. I prefer, however, the application in the fall, for it will give to the plants a larger and stronger root, and sufficient top.

My experiment on wheat was made as late as the tenth of June, and its effect was manifest; the wheat was taller, and much thicker than that of the adjoining land.

My farmer who has tried it somewhat largely, says it will also destroy the grub and the wire worm; this I think probable, for I know if put on the hill it will destroy the corn.

I have no doubt it will prove equally valuable as a manure, for rye, oats, barley, peas, beans, grass, tobacco and sugar cane; also for trees, plants and flowers, as well as the productions of the horticulturist generally.

The experiments upon cucumbers, melons, carrots, beets, cabbages, house plants, and peach trees have proved decidedly successful. The cucumbers grew rapidly and luxuriantly, and yielded early an abundance of fruit; and the cabbages were twice as large as those not manured. The beets and carrots were also much larger than the adjoining rows not manured.

The chemical guano may be manufactured in any reasonably quantity, and my intention is to prepare enough during the fall and winter, to enable at least the most enterprising of our farmers to test its value by experiment the next season.

Respectfully yours,

D. B. STOCKHOLM.

Ithaca, Sept. 11, 1846.

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I hereby certify, that I have used this season, some of the chemical guano, manufactured by D. B. Stockholm, Esq., on potatoes and cucumbers with decided success. Both were planted the fifth day of May, and by the fourth of July, I have potatoes on the parts manured, of good size and fit to boil; whilst the next row of potatoes which was not manured with the guano, have none larger than peas; my cucumbers were also large enough for the table by the fourth of July. The vines grew vigorously; were of a dark color; their stems were the largest I ever saw, they lasted long, and yielded an abundance of fruit. My garden adjoins that of Mr. Stockholm, where he has also been making experiments with his guano, and I have noticed them particularly at his request.

Corn manured with it liberally, planted the last of May, although it was injured by the drought, grew vigorously. It is now well eared and out of danger of frost.

Some corn planted the first of July, to which the manure was applied, has also grown well, although hoed but once; and now has on it ears nearly fit to roast. The beets, carrots and melons have also grown luxuriantly, although in consequence of the frequent absence of Mr. Stockholm from the village during the summer, the garden has been neglected, and is overrun with weeds and grass. I am well satisfied that the vegetables of his garden have not been better, if as well attended as the corn of the farm grown in the field. This was done intentionally by Mr. S. in order that he might ascertain what would be the probable effect of the manure upon the crops of the farmer. The garden of Mr. S. had no other manure this season; but the guano was liberally applied twice to the corn. It is of full height, its color is dark, and for the kind of corn, (Tuscarora and sweet corn) the ears are numerous and of good size. It is planted in hills about 2½ feet apart.

I have closely observed with much interest, the effect of this new manure, and have no hesitation in saying, that the chemical guano, discovered by Mr. Stockholm, is the greatest and best manure I ever saw.

From the corn planted the first of July, was gathered on the 11th of September, a mess of corn fit to boil; and if we have no frost before the 16th it will ripen.

Ithaca, Aug. 29, 1846. B. GIFFORD.

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THE HESSIAN FLY:

ITS HISTORY, CHARACTER, TRANSFORMATIONS, AND HABITS.

By Asa Fitch, M. D.

[Originally published in the American Journal of Agriculture and Science, Vol. iv. v., and now revised by the author.]

The insect which we are about to consider, has for a long period been, at times, a severe scourge, in every district of our country. It is more formidable to us, says Dr. B. S. Barton, than would be an army of twenty thousand Hessians, or of any other twenty thousand hirelings, supplied with all the implements of war. Hence it has forced itself prominently to the notice both of agriculturists and men of science. No other insect of the tens of thousands that teem in our land, has received a tithe of the attention, or been chronicled with a tithe of the voluminousness that has been assigned to this species. Our scientific journals, our agricultural magazines, and our common newspapers, have each accorded to it a conspicuous place in their columns. As may well be supposed, almost every point in its history, has by one and another of its observers, been closely investigated, and laid before the public. Very little that is new, can, therefore, at this day be embodied in an account of this species. The most that an observer can accomplish, is to add his testimony in confirmation of facts that have been already announced. The most that a writer can aim at, is to gather the various papers that are scattered through volumes sufficiently numerous of themselves to form a library, sift from them whatever they contain of importance, and arrange the facts thus acquired, into a connected and symmetrical memoir. Such is the object of the present essay; to carefully review the various accounts that have been hitherto published, extract from each the items of value which it contains, compare these with personal observations made under favorable circumstances during the past twelve months, and with the materials thus acquired, write out a history of this species, more

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ample in its details than any that has been hitherto attempted, and containing a complete summary of all that is known of this insect down to the present day.

It is a European Insect.

For several years subsequent to the first appearance of the Hessian fly in this country, it was universally believed to have been derived from abroad. When, however, the severe devastations which it was committing upon this continent became known in Europe, public attention was so strongly excited as to lead to an extensive and thorough search for the insect there. The result of this investigation, as given by Sir Joseph Banks in his report to the British government, was, that "no such insect could be found to exist in Germany or any other part of Europe." It was in consequence, received as an established fact, and assented to on all hands, that this was an exclusively American species. Of late years, however, new light has been shed upon this subject; and we now proceed to detail the evidence which induces us to believe that the Hessian fly is indeed a European insect.

It would appear that this insect, or one identical with it in its characters and habits, did exist, and commit severe ravages in Europe, long anterior to its appearance in America. In Duhamel's *Practical Treatise of Husbandry*, (London, 1759, 4to. p. 90,) and also in his *Elements of Agriculture*, (Lond. 1764, 8vo., vol. i., p. 269,) after alluding to a worm in the root of oats, he says, "I suspect it to have been an insect of this kind that *destroyed so much wheat* in the neighborhood of Geneva, and which M. de Chateauvieux describes thus: 'Our wheat in the present month of May, 1755, sustained a loss, which even that cultivated according to the new husbandry has not escaped. A number of *small white worms* have been found on it, *which*, after a time, *turn to a chestnut color;* they place themselves *betwixt the leaves*, and gnaw the stalk; they are commonly found *betwixt the first joint and the root;* the stalks on which they fix are immediately at a stand; they *grow yellow and wither*. The same accident happened in 1732: these insects appeared about the middle of May, and did so much damage that the crops were scarcely worth anything.'" This account, though per-

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haps too brief and imperfect to justify a decided opinion, corresponds much more exactly with the Hessian fly, than with any other insect of which we have any knowledge. Acquainted with it, as our men of science in this country were, we are surprised that they so readily and unanimously succumbed to the sentiment that the species was indigenous to America.

In 1788, as we are informed in the *Encyclopædia Britannica*, (art. Hessian fly, §5,) the Duke of Dorset addressed a letter to the Royal Society of Agriculture in France, inquiring if the Hessian fly existed in that country. "The report of the society was accompanied with a drawing of two insects, one of which was supposed to be the caterpillar of the Hessian fly, from its attacking the wheat only when in the herb; beginning its ravages in autumn, reappearing in the spring, and undergoing the same metamorphoses." From an obscurity in the phraseology of the subsequent paragraph, and a reference therein to the memoirs of the Stockholm Academy, it would seem that the society regarded the Hessian fly as identical with the *Chlorops pumilionis* (Bjerkander) Meig.—a fly whose larva lives at the base of the stems of the wheat and rye, and which a few years before had been extremely injurious to these crops in Sweden. A doubt is therefore excited, whether the French insect might not have been this latter species. But, as the society deemed their insect to be the Hessian fly, it is somewhat singular that its history was not investigated and distinctly recorded, before the announcement was so confidently put forth, that this species could not be found in Europe.

But, more recently, clearer evidence upon this point is furnished us. Mr. Herrick, in his valuable article in *Silliman's Journal*, (vol. xli. p. 154,) informs us, that Mr. J. D. Dana, who had been much associated with him in making a thorough investigation of the habits of the Hessian fly and its parasites, being on a voyage in the Mediterranean, "on the 13th of March, 1834, and subsequently, collected several larvæ and pupæ, from wheat plants growing in a field, on the Island of Minorca. From these pupæ, were evolved on the 16th of March, 1834, two individuals of an insect, which his recollections (aided by a drawing of the Hessian fly with which he was provided), enabled him to pronounce to be the *Cecidomyia*

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destructor. More of the perfect insects were evolved in the course of the month, one of which deposited eggs like those of the Hessian fly. In letters, dated Mahon, April 8 and 21, Mr. D. sent me five of the insects, and several of the pupæ. They arrived in safety, and after a careful examination, I saw no good reason to doubt the identity of this insect with the Hessian fly. The Mahonese asserted that the insect had been there from time immemorial, and often did great damage both there and in Spain." And further, "on the 28th of April, 1834, Mr. D. collected from a wheat field just without the walls of Toulon, in France, several pupæ and one larva like those before obtained. On the 4th of June, 1834, he obtained similar pupæ from a wheat field near Naples." We doubt whether there was living, at that day, two persons better qualified to determine the identity of these insects with the Hessian fly, than Messrs. Herrick and Dana. Testimony from such a source needs no comment.

Finally, the year previous to that in which Mr. Dana made the above examination, it appears that the wheat crops in some parts of Germany, were seriously injured by an insect which was generally regarded as the Hessian fly. M. Köllar, of Vienna, in his treatise on injurious insects, (London, 1840, p. 119,) relates that in the autumn of 1843, complaints were made that the wheat on the estates of his imperial highness, the Archduke Charles, at Altenburg, in Hungary, had been considerably injured by an unknown insect, of which the following account was forwarded to the archducal office. "Till the end of May, the wheat was in excellent condition, but about the commencement of June, the ears began to hang down, and the stem to bend, and in a few days patches appeared in different parts of the fields which were of rather poorer soil than the others, with the plants entangled and matted together, as though lodged by heavy rains. . . . . More than two-thirds of the straw was lodged in less than a week; and the heavy rains which fell in the latter half of June, so fully completed the work of destruction, that the wheat fields looked *as if herds of cattle had gone over them*. The cause of this damage was sought for, and we soon discovered at the crown of the root of each of the wheat plants, or at the first joint, within the sheath of the leaf, whole clusters of

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pupæ of an unknown insect. Those plants, the roots of which had been attacked, died off; and the spot to which the insects had fastened themselves on the still soft straw within the sheath of the leaf, was found to be brown, withered, and tough, yet *without any apparent wound.* The straw which had become lodged, produced small ears, with few and imperfect grains, which ripened with difficulty, and the straw was twisted, and of a very inferior quality."

Nearly a hundred miles south-west of Saxe-Altenburgh, a similar account is simultaneously given by Baron Von Meninger, agricultural director of the Duke of Saxe-Coburg. According to his report, "In the fields of Weikendorf, and other neighboring localities, caterpillars were found which had devastated whole fields. These caterpillars had their first abode near the ground, in the first joint of the straw, where they were found in whole families, in a sort of nest. The largest were about the length of two lines. Their color was pale green, with a small black dot above. . . . . The straw became dry at the first joint, and fell over or leaned on its neighbor. The upper part of the straw received its nourishment from the atmosphere alone, and the ears formed: but they continued in a sickly condition, and could only produce small, shrivelled grains. The life of the caterpillars (their duration as naked worms?) appeared to be from about twenty-four to thirty days. As the straw ripened, the insects changed their color into a brownish hue, shrivelled up, and finally disappeared."

M. Köllar, who seems to have known nothing of the American history of this insect beyond what he gathered from Mr. Say's brief account, obtained some of the diseased straw from Germany, in which, he says, "many of the brown pupæ were found. I opened the pupa-case, and was able to determine with great probability, partly from the form of the pupa, and partly from the unchanged caterpillar in the pupa-case, that it must be a small fly. I only ascertained this from the minute description and drawing of the insect from Mr. Thomas Say, in a North American journal, in which a stem of wheat, with the pupa within it, is exactly represented as I have seen our wheat."

Mr. Westwood, in a note appended to this account, says, it is perhaps questionable whether the species, of which the above de-

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tails are given by M. Kollar, is identical with Say's *Cecidomyia destructor*. He even intimates a doubt whether the European species is a Cecidomyia, for, from all that had been observed, this genus in its pupa state, is naked, like the other Tipulidæ, and not enclosed in a case. Having himself received specimens from Dr. Hammerschmidt of Vienna, and still in the straw near the roots, he found the insect "enclosed in a leathery case," on opening which, he discovered the *larva* shrivelled up and dead. Now this nice point, so particularly noted, and so strikingly showing the acuteness of discrimination possessed by that eminent naturalist, we think must dispel the last lingering doubt as to the identity of the American and European insects. As will fully appear in a subsequent part of this paper, the Hessian fly presents this singular anomaly, that its pupa is coarctate, or enclosed in a case like those of the *other families* of dipterous insects, but *unlike* all the pupæ of the Cecidomyians and other Tipulidæ that have been hitherto observed! The very fact, therefore, which leads Mr. Westwood to suspect the European insect is not a Cecidomyia, all but demonstrates that *it is the Hessian fly!*

Its Introduction into America.

The existence of the Hessian fly in Europe being premised, so many circumstances conspire to render it probable that it was introduced into this country in the mode originally supposed, that scarcely a doubt can now be entertained upon this point.

When the habits and transformations of the insect itself are considered, it will be perceived that these interpose great obstacles to its being transported across the Atlantic, at a period when two months or more were required for the voyage. Its passing through two generations in a year, makes its continuance in any one stage of its existence comparatively brief. The first of these generations occupies about seven months, from October to April inclusive. This generation is nurtured at the roots of the young plants, and there is no probability that any of these plants would be taken up, so that the insect could thus be conveyed away. The second generation is nurtured in the lower joints of the straw. The worm attains maturity in May, becomes a dormant "flax seed" in June, continues in

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this state till August, when the fly comes out to deposit its eggs in September. Though most of these flax seeds remain in the stubble when the grain is harvested, numbers of them are so high in the straw, as to be gathered with it. But they are so firmly imbedded in the straw, and enveloped within the sheathing base of the leaf, that it must be rare that any of them are detached by the flail in threshing, so as to find their way among the grain, and thus with it be carried to a distance. As the flax seeds moreover, evolve the perfect insect in August, it must be equally rare that a solitary fly comes from the straw after that date. These facts clearly show that there is *but one mode*, and *but one month in the year*, in which this insect could probably have been conveyed to this country at that time, to wit, *in straw* landed upon our coast *in August*. If landed at a later date, the flies would have completed their transformations, and made their escape, or perished in their confinement; if earlier, there is no probability that the straw could have been of the growth of that year, consequently it would have contained no live insects. Our present knowledge of the habits of this insect thus affords us a singularly accurate test, for ascertaining the truth of the original theory respecting the mode in which it was introduced.

And how do the facts furnished us by the military history of those times, accord with what we have seen to be almost essential contingencies to the importation of this insect? Early in July of the year 1776, General Sir William Howe arrived on the New-York coast from Halifax, with the troops which had evacuated Boston, and debarked upon that part of Staten Island which lies within the Narrows—one of the reasons which induced him to make this part of the continent the central point of his operations being, that "Long Island was very fertile in wheat and all other corns, and was deemed almost equal alone to the maintenance of an army," (*Bisset's Hist. Geo. III*). We are informed in *Marshall's Life of Washington*, (vol. ii. p. 424,) under the date of *August*, 1776, that "the reinforcements to the British army were *now* arriving daily from Europe." Lord Howe's strength was hereby augmented to twenty-four thousand men, about half of whom (as is probable from the statement, page 416,) were newly arrived "Hessians and Waldeckers." The most of these were from Hesse Cassel, a district

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but about a hundred miles distant from Saxe-Coburg and Saxe-Altenburg, where, as we have already seen, the same insect did much damage to the wheat crops in 1833. And again, under the date of August 25, (p. 437,) it is stated, that "*on this day*, General De Heister landed with two brigades of Hessians. The next day he took post at Flatbush," on Long Island, about six miles distant from the main encampment on Staten Island.

In juxtaposition with this account, let us now place the statement of one, who, Sir John Temple, the British Consul General at New-York tells us, "had been more curious with respect to this insect, than any other person with whom he was acquainted." Says Col. Morgan, (*Encyc. Britann.*) "The Hessian fly was first introduced into America by means of some straw made use of in package, or otherwise, landed on Long Island, at an early period of the late war; and its first appearance was in the neighborhood of Sir William Howe's debarkation, and at Flatbush." So many circumstances concur to evince the truth of the account here given by Col. Morgan, to its very letter, that we think no one will hereafter hesitate to give it full credence.

We have searched in vain for the date of the embarkation of the Hessian troops, or the number of days occupied by them in crossing the ocean. It is possible they may all have left Europe anterior to the harvest. But in Germany, as in this country, as is shown by M. Köllar's statement, the infested straw becomes broken and tangled, and turns yellow, early in June. Had a company of soldiers needed straw for package, no objections would have been made to their going into a field of this kind, and with a scythe, gathering what they required, weeks before the usual time of harvest.

We have no where met with but one statement, which goes directly to prove that this insect is indigenous to this country, or existed here anterior to the arrival of the Hessian troops. The late Judge Hickock of Lansingburgh, N. Y., in a communication to the Board of Agriculture in the year 1823, and published in their *Memoirs*, (vol. ii. page 169,) says, "a respectable and observing farmer of this town, Col. James Brookins, has informed me, that on his first hearing of the alarm on Long Island, in the year 1786, (doubtless

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1776 is intended,) and many years before its ravages were complained of in this part of the country, he detected the same insect, upon examining the wheat growing on his farm in this town." If this insect, observed by Col. Brookins in 1776, was the genuine *destructor*, it is a little singular that to betray its real character, it patiently awaited some fourteen years, to be reinforced by its kindred from Long Island, who reached it by regular advances made year after year—that on their arrival, and not till then, it acquired the skill and courage to go forth and lay waste the crops through all this section of country for several successive years. The strong probability is, that it was some other insect which was found by Col. Brookins.

Its Civil History and Bibliography.

We now proceed to adduce such facts as we have been able to collect, respecting the devastation of this insect in different years, or in other words, to trace out with as much precision as the data before us will enable us to do, its civil history, from the period of its first appearance, down to the present time; and in connection with this, to notice the different memoirs and other papers of value that have been published respecting it, so far as we have had an opportunity of becoming acquainted with them.

Anterior to the revolutionary war, the Hessian fly was unknown in this country. No allusion to an insect of this kind has been found in any American work, or in the journal of any foreign traveller, nor since its appearance has it been intimated that any of our citizens had ever observed it previous to that time.

All accounts concur in stating that its first appearance was upon Staten Island, and the west end of Long Island. There is some discrepancy between different writers, as to the particular year in which it was first observed. Dr. Mitchell states (*Encyc. Britann.*) that "it was first discovered in the year 1776." The ravages of the insect, however, are so much more conspicuous and liable to attract attention from the broken and tangled condition of the straw as it approaches maturity in June, than they are when a portion of the young shoots are discolored and withered in October, that there can be little doubt but it would first be observed at the

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former period. Had Dr. Mitchell, therefore, received definite information upon this point, it would doubtless have been coupled with the statement, that it was noticed at or before the harvest in that year, and consequently anterior to the arrival of the Hessian troops—which fact, he, confident as he was that this was an indigenous insect, would not have failed triumphantly to have stated. It is hence believed, that Dr. M. has assumed this date, from the current report that this insect was introduced by the Hessian soldiers, knowing this to have been the year of their arrival.

From the "flax seeds" casually lodged in the imported straw, only a few flies would probably be evolved, to deposit their eggs upon the young wheat in the autumn of 1776; nor would these have multiplied to such an extent in the following spring as to attract attention at the time of harvest. But, increasing with each successive brood, by the harvest of the following year, 1778, we might anticipate its being observed, and by a year thereafter, it would become so numerous that its real character would no longer be in doubt. And in accordance with this, we are informed by Colonel Morgan, that "the fly made its first appearance in 1778;" and Mr. Clark, who in 1787 went to Long Island expressly to gather authentic information respecting this insect, says in his report, "on the best inquiry I could make, during my stay there, I satisfied myself in the following particulars, namely: first, that the Hessian fly made its first appearance there about the year 1779, so as to injure, and in some cases to destroy their crops of wheat." An anonymous writer in *Carey's Museum*, (vol. i, p. 143,) gives the same year as about the period of its discovery.

We therefore regard the year 1779 as most probably the date when its ravages actually commenced. The crops of wheat were severely injured or wholly destroyed by it in Kings and Richmond counties, during several of the following years; and each succeeding generation regularly enlarged the sphere of its devastations in every direction.

Quite early in its history, the important fact became accidentally discovered, that certain varieties of wheat are capable of withstanding its attacks. In the year 1781, a prize schooner loaded with wheat

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was taken in the Delaware river, and carried into New-York, whence the cargo was sent to the mill of Isaac Underhill, near Flushing, Long Island, to be ground. Mr. Underhill's own crop of the previous year having been so entirely destroyed that he had no grain for seed, he took what he required for sowing from this cargo, and reaped therefrom upwards of twenty bushels per acre, whilst few of his neighbors for miles around had any to reap, so calamitous were the operations of the fly. To his praise be it recorded, he distributed his entire crop, in small quantities, and at a moderate price, among his neighbors, for seed; and all who made use of it were similarly successful. The "Underhill wheat" at once became noted, for effectually resisting the attacks of the fly, and for many years subsequently, as we shall have frequent occasion to notice, was eagerly sought for and successfully cultivated, where all other varieties of this grain failed. (*Vaux and Jacobs, Clark*).

In 1786, the fly reached Col. Morgan's farm, at Prospect, New-Jersey, about forty miles south-west of Staten Island. It was first observed in May, and by October was so increased, that some farmers in Middlesex, Somerset, and Monmouth counties were induced to plow up their young wheat and sow the fields to rye. Other fields, less injured, were allowed to remain until the succeeding spring, when their appearance was so disheartening, that many of them were plowed up and sowed with spring grain.

Eastward its progress would appear to have been much more rapid than towards the west and south, for this same year it had reached a hundred miles, nearly to the east end of Long Island, and was detected on Shelter Island. "It was first perceived a little before the harvest, and appeared to have come from the west end of Long Island, in a gradual progress of between twenty and thirty miles in a year. Before the harvest the species appeared to be few in number, but in the fall it was found to have greatly increased, and appeared in great numbers on the green wheat, and was observed to do most injury to that which had been most early sown." (*Havens, p.* 71).

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Public attention was now becoming strongly turned towards this formidable foe. The New-York Society for promoting Useful Knowledge, issued an advertisement, requesting information respecting it. Two communications were soon received by them, and were directed to be inserted in the secular papers. These are the first published documents relating to the fly, that have occurred to our notice. They are copied into *Carey's American Museum* (Phila. vol. i. p. 324–326). One of them, dated New-York, September 1, 1786, gives a brief but pretty accurate account of the situation and habits of the insect, particularly in the fall and spring. The other, dated Hunterdon, New-Jersey, January 1, 1787, after hastily alluding to its habits, proposes as remedies, late sowing, on rich land; drawing elder bushes over the young plants; and passing over the wheat with a heavy roller to crush the worms.

In the *Pennsylvania Mercury* of June 8, 1787, is published a letter from Col. George Morgan, addressed to the Philadelphia Society for promoting Agriculture. He suggests the importance of their appointing some competent person to fully investigate the habits of the Hessian fly, and the remedies to protect from it, after the example of the Paris Academy of Sciences, which had commissioned Messrs. Duhamel and Tillet to enquire out the history of the Angoumois grain moth; he alludes to contradictory reports respecting the Underhill wheat, copies the paragraphs already given from M. Châteauvieux, as "answering in every respect to our Hessian fly," and gives an account of the ravages of the insect in his vicinity, and its habits so far as observed.

The *Mercury* of September 14th, contains another letter from Col. Morgan, correcting some inaccuracies in his previous communication, and giving some additional interesting items. He says, "those who are doubtful whether the fly is in their neighborhood, or cannot find the eggs or nits in the wheat, may satisfy themselves by opening their windows at night, and burning a candle in the room. The fly will enter in proportion to their numbers abroad. The first night after the commencement of the wheat harvest this season, they filled my dining room in such numbers, as to be exceedingly troublesome in the eating and drinking vessels. Without exaggeration, I may say, that a glass tumbler, from which beer

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had been just drank at dinner, had five hundred flies in it, within a few minutes. The windows are filled with them when they desire to make their escape. They are very distinguishable from every other fly, by their (having) horns or whiskers."

Accompanying Col. Morgan's letter is a brief report, made by Thomas Clark, who, at the request of his neighbors had gone to Long Island to gather correct information respecting the fly, and the means of escaping its depredations. He became well satisfied that the Underhill wheat was fly proof, and could be obtained in any desired quantities, at the moderate price of $1.25 per bushel. He also reports the interesting fact, that the fly had now become so reduced in its numbers on the west end of Long Island, that many of the inhabitants supposed there had been none the present year, though he himself saw it there quite common still. Since 1779 their crops had been destroyed more or less every year, until the present.

In 1788, a communication in *Carey's Museum*, (vol. iv. p. 47), from Buck's county, Pa., informs us that in the vicinity of Trenton, N. J., so much as the seed sown would not be harvested. Many farmers had plowed up their wheat crops in the spring, and planted them with corn. The fly also in this year commenced it ravages in the State of Pennsylvania. "Near seed-time last year, many persons on the Pennsylvania shore saw the insect so thick in the air as to appear like a cloud, coming over Delaware river."

Following this communication, is a paper signed "a landholder," who regards the eggs as laid in the grain of ripe wheat, and sowed with them; and proposes procuring seed from places not infested with the fly, as a remedy.

Messrs. Vaux and Jacobs, farmers of Providence, Pa., in July, 1788, made a tour through New Jersey and Long Island, for the purpose of gathering information respecting the fly, and the best modes of withstanding its attack. Their account is published in the *Philadelphia Packet* of August 21st, and is mainly occupied with a description of the Underhill wheat, and a full confirmation of previous reports respecting it.

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On the east part of Long Island, where, as already noticed, the fly arrived in 1786, it so rapidly multiplied, that the following year many fields were nearly destroyed, and this year the third of its presence, the wheat crop "was cut off almost universally." The red-bald, which was the common winter variety there raised; and the spring wheat were equally affected. Rye in many fields was much injured, and a field of summer barley was wholly destroyed. (*Havens*, p. 73).

Wheat in large quantities, was at this period exported hence to Great Britain. Accounts of the appaling havoc that this insect was making, excited the attention of the government there, and aroused their fears, lest so dreadful a scourge should be introduced into that country, by means of the American grain. "The Privy Council sat day after day, (says *Kirby and Spence*, vol. i. p. 50), anxiously debating what measures should be adopted to ward off the danger of a calamity more to be dreaded, as they well knew, than the plague or pestilence. Expresses were sent off in all directions to the officers of the customs at the different outports respecting the examination of cargoes—despatches written to the embassadors in France, Austria, Prussia and America, to gain that information of the want of which they were now so sensible; and so important was the business deemed, that the minutes of the council, and the documents collected from all quarters fill upwards of 200 octavo pages." In consequence of the information laid before them, a proclamation was issued by his Britanic majesty, on the 25th of June, 1788, prohibiting the entry of wheat, the growth of any of the territories of the United States, into any of the ports of Great Britain. It has been remarked as very singular, that although the *entry* of American wheat was thus interdicted, it was still allowed to be *stored* at the different seaports, thus affording the obnoxious insects, if any of them had been contained in the grain, a very convenient opportunity to escape and make their way into the country!

When the news of the closing of the British ports against American wheat reached this country, the measure was at once regarded as having resulted from misinformation respecting the habits of this insect. The supreme executive council of Pennsylvania immediately addressed a letter to the Philadelphia ociety for promoting Ag-

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riculture, requesting the society to investigate and report to the Council the nature of the Hessian fly, and particularly whether the quality of the grain is affected by it. The society promptly replied, "that from every communication made to them on that subject, they are decidedly of opinion that it is the plant of the wheat alone, that is injured by this destructive insect, that what grain happens to be produced from such plants, is sound and good, and that this insect is not propagated by sowing wheat which grew on fields infected with it." They also refer to the letters of Col. Morgan, and of Messrs. Vaux and Jacobs, as containing the best information extant, relative to the natural history of the insect, and the most successful method of preventing its depredations. (*Carey's Museum*, vol. iv. p. 244).

Dr. Currie took an active part in showing the government and people of England, that the information which had led to the closing of the ports against the entry of American grain, was wholly erroneous; and in eight or ten months the government bought the stored wheat at prime cost, kiln-dried it, and resold it at great loss. The prohibition was taken off almost immediately thereafter. (*Memoir of Currie*, ii. 65).

In 1789, as we learn from the *Encyc. Britann.*, the Hessian fly first reached Saratoga, two hundred miles north of its original station. From the statements of several persons who were residing in Washington and Saratoga counties so long ago as this date, it appears that the crops in this district of country, (at that day second to no other in the quantity of wheat which it produced,) first began to fail about the year 1790 or 1791. The insect reached here by a regular progess from the south, coming nearer and nearer each successive year. It continued to infest the crops during a number of the following years, sometimes severely, at others but moderately. On two or three occasions, many of the fields in Saratoga county were entirely destroyed. I do not learn that in this vicinity their devastations at any time reached this extent. About the year 1803, their last depredations were committed. From that time this insect has never been observed in this vicinity, that I can ascertain, until the autumn of 1845. In Rensselaer county, however, I am credibly informed, that it was quite injurious about the year 1810.

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In 1792, the recently instituted New-York Society for the promotion of Agriculture, Arts, and Manufactures, issued part first of its *Transactions*, containing (p. 71–86), "Observations on the Hessian fly, by Jonathan N. Havens." This is the most valuable memoir that had hitherto appeared upon this subject, and few of those of a later date surpass it. After sketching the ravages of the fly in different years in his own vicinity, Judge H. describes with much precision its situation and appearance in the respective stages of its existence, showing that it passes regularly through but two generations in a year, instead of three or four, as anterior writers had stated. As remedies, he recommends sowing none but the bearded wheats, and burning or plowing up the stubble soon after harvest. This last important measure had never before been proposed; Judge H. had been led directly to it, by a close investigation of the habits of this insect.

The American Philosophical Society this year appointed from among its most competent members, a committee (Thomas Jefferson, B. Smith Barton, James Hutchinson, and Casper Wistar), "for the purpose of collecting and communicating to the society materials for forming the natural history of the Hessian fly." This committee immediately issued a circular, requesting all persons acquainted with any facts relating to this insect, its depredations, and preventives, to communicate the same by letter to their chairman. The numerous points upon which information was desired, were particularly detailed in an extended series of questions, which clearly indicate the importance which they attached to this subject, and the thorough investigation which they proposed making. (*Carey's Museum*, vol. xi. p. 285). It cannot but be regretted that this business, committed to such capable hands, was not pursued and brought to a close with the same zeal with which it was evidently commenced. We have met with no report ever rendered by them.

At this time, as we infer from a clause in the circular just alluded to, and also from some passages in Dr. Mitchell's address before the New-York Society of Agriculture (*Transactions*, vol. i. p. 32,) the insect was becoming so rare in all the more densely settled parts of the Middle States, which had been first overspread by it, that it was the common opinion that it would soon vanish from the country en-

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tirely. Notices of it in the magazines and newspapers become more rare, and it was evidently ceasing to be regarded with that intense solicitude which it had hitherto excited. It was, however, with unabated vigor, continuing its progress southward. A letter from Prospect Hill, Delaware, dated June 12th, 1792, (*Carey's Museum*, vol. xi. p. 301,) states that the fly arrived there "in prodigious clouds," about the middle of the preceding September. It describes the place were eggs were deposited on the young wheat, the growth of the worm, and the perishing of all the plants, except those growing upon a rich soil, and adds further testimony in favor of the Underhill wheat.

In 1797, Dr. Isaac Chapman, of Bucks county, Pa., prepared one of the best accounts of this species that has ever appeared, containing the details of his own careful observations upon the insect and the time of its appearance in its different stages. These observations led him to recommend as the most certain safeguards against the fall attack, late sowing, and against the spring attack, a quick vigorous growth, to be obtained by procuring southern seed and sowing it on a rich, elevated and dry soil. His paper is published in the fifth volume of the *Memoirs of the Philadelphia Society for promoting Agriculture*, a volume which we regret having been unable to find in either of the largest libraries of this State. We are therefore obliged to depend for its contents upon second hand accounts. Dr. C. states that the fly was this year found upon the west side of the Alleghany mountains.

The eighth volume of the *Encyclopædia Britannica*, published this year, gives (pages 489–495) an extended article under the head *Hessian Fly*, consisting chiefly of a summary of the several documents laid before the privy council during their investigations.

In Dr. B. S. Barton's *Fragments of the Natural History of Pennsylvania*, issued in 1799, the author announces (p. 23) his intention of publishing "a memoir upon that destructive insect called the Hessian fly." It is probable that whatever communications were addressed to the committee of the Philosophical Society, had been consigned to his hands. We are not aware that the promised memoir ever appeared.

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"About the year 1801, the Hessian flies first made their appearance in the neighborhood of the city of Richmond. We saw but little mischief that year. But in 1802 they were much more destructive—1803, they swept whole fields—about the same in 1804" (*H. M'Clelland, Amer. Farmer*, vol. ii. p. 234).

In the year 1803, we arrive at the first notice of this species, of a scientific nature. Dr. Mitchell, in a short article in the *Medical Repository* (vol. vii. p. 97, 98), entitled "Further ravages of the wheat insect, or *Tipula tritici of America*, and of another species of Tipula in Europe," states that it is now understood that our insect is a Tipula. He alludes to the extent of this genus, (ninety-four species being enumerated by Weber,) and though he has often examined our insect, and bred it so as to observe its transformations, he declines giving a decided opinion whether or not our species is different from all those that had been described. He refers to the species "treated as a nondescript" by the Rev. Mr. Kirby, in the *Linnæan Transactions*, copies its name and technical characters, and closes with the remark, that whether Mr. Kirby's insect is a new one or not, it is not the same animal which has been so injurious in this country. Had the doctor but added a few words descriptive of our species, he would undoubtedly be entitled to "the barren honors of a synonym." Respecting the depredations of the insect at this time, we learn from him, that "during the cold and dry spring of 1803 these creatures again infested the wheat more than they had done for many years. Many crops were cut off early in June, and the ground plowed up for other purposes.

During a long interval we meet with no further notices of this species. Its depredations would appear to have been so slight, and public attention was so much engrossed, with other affairs, that nothing, as we have discovered, is recorded of it.

At length, in 1817, it is stated to have renewed its ravages in various sections of the country. In the neighborhood of New-York and of Philadelphia, it is evident that it was unusually abundant, and in parts of Maryland and Virginia, it was perhaps more destructive than it had ever been before.

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It was on the 24th of June in this year, that Mr. Say read before the Philadelphia Academy of Natural Sciences a paper entitled "Some account of the insect known by the name of Hessian fly, and of a parasitic insect that feeds on it." This contains an accurate technical description of the insect, on which he bestows the name of *Cecidomyia destructor*, and also of its most common parasite, referred by him to the genus *Ceraphron*, and also named *destructor*. This paper was published in the *Journal of the Academy* (vol. i. p. 45–48), issued in the course of the ensuing month, and was followed in August by a copperplate illustration of these insects, drawn and engraved by Mr. C. A. Le Sueur. "A local habitation and a name" were thus conferred upon this world-renowned species, by which it has ever since been definitely specified and arranged in works of science.

In the *American Monthly Magazine and Critical Review* for August, 1817, New-York, (vol. i. p. 275–279,) appeared a paper bearing the title, "An account of the wheat insect of America, or the *Tipula vaginalis tritici*, commonly called the Hessian fly." This paper gives the substance of Judge Havens's memoir, and professes to copy a technical name and description which had been published by Dr. Mitchell in the *New-York Gazette* of July 3d. But whoever refers to the *New-York Gazette*, will find no attempt at a technical description, and no name except that of *Tipula Tritici*, which is in one instance, casually as it were, made use of. The word *vaginalis* is therefore an interpolation of the writer in the *Magazine;* and as he, at least on some subsequent occasions, refrained from bringing this name farther into notice, when a fair opportunity was presented him for doing so (as editor of *Hooper's Medical dictionary, &c.*) we doubt not, when the excitement of the day was past, he deeply regretted that he had ever drawn up an article so derogatory to himself as that which appears in the *Magazine*. We should therefore suppress all allusion to this subject, with the hope that it might pass wholly into oblivion, but that the article from the *Magazine* has of late years been copied into some of our agricultural journals, and has been referred to in terms of commendation by some names of respectability. With the currency thus unfortunately given to it, it will be read by hundreds who can never see the *New-York Gazette*, and will thus deem, that one

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of our most distinguished savans had degraded himself by a paltry attempt to forestall Mr. Say in giving to this species a technical name.

Gen. John H. Cocke this year communicated his observations to the Albemarle Agricultural Society of Virginia. Having well ascertained that the fly deposits its eggs upon the blades of the wheat, at from a half to three inches from the central stalk, and that these remain there four or five days before they hatch, he recommends feeding off the crop, by pasturing sheep upon it; thus destroying the eggs, and depriving the fly of its wonted place for depositing them. "A King William Farmer" dissents from this advice, and thinks covering the seed to the depth of three inches the best safeguard against the fly. "A Frederick County Farmer" and Dr. Merriwether oppose this, and a controversy ensues, reaching through several communications in the *Richmond Enquirer* and *National Intelligencer*, and afterwards continued in the *American Farmer*, till in 1820 it was brought to a close by a valuable article from that distinguished agriculturist, the late James M. Garnett, (*American Farmer*, vol. ii. p. 174,) accompanied by an illustration, which would seem to clearly demonstrate the correctness of the statements first put forth by the King William Farmer. This subject will be fully considered in a subsequent part of this essay.

In 1820, Edward Tilghman, of Maryland, described (*American Farmer*, ii. 235) the place and mode of deposition of the eggs, he having in numerous instances watched the fly in the very act of ovipositing. At a later day Mr. T. has favored the public with a more full and exact description of this process, (*Cultivator*, viii. p. 82). James Worth of Pennsylvania, also in 1820 minutely described from his personal observations, the situation of the egg, its hatching, and the journey of the worm down the leaf to its usual nidus, (*American Farmer*, ii., 180).

In the second volume of the *Memoirs of the New York Board of Agriculture*, issued in 1823, is a communication (p. 169–171) on the Hessian fly, from Judge Hickock, who deems a fertile soil the best safeguard. In the third volume of the same work, published in 1826, (p. 326–338,) is a paper by the indefatigable secretary of

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the board, the late Judge Buel, giving a condensed summary of all the information respecting this insect, contained in the accounts of Judge Havens, Dr. Chapman, and the different writers in the *American Farmer*.

In 1840, Miss Margaretta H. Morris, of Germantown, Pa., in a communication to the American Philosophical Society, revives the theory of "a landholder," already noticed, that the egg of the fly is deposited in the grain, and that obtaining seed from uninfected districts will therefore be the best safeguard. The report of the committee upon this paper, is inserted in the society's *Proceedings* of November, 1840, and the paper itself is published in the society's *Transactions* (vol. viii. p. 49-51). Communications bearing upon the same subject were also made to the Academy of Natural Sciences, in 1841, by Dr. B. H. Coates, (*Proceedings Acad.*, vol. i. p. 45, 54 and 57).

In 1841, Mr. E. C. Herrick, librarian of Yale College, gave "a brief, preliminary account of the Hessian fly, and its parasites," in *Silliman's Journal of Science* (vol. xli., p. 153–158). This paper announces the interesting fact of Mr. Dana's having met with apparently the same insect on the shores of the Mediterranean, details the writer's own accurate observations of the changes from the egg to the flax seed state, and enumerates four different parasitic insects that prey upon it during these periods of its existence, by which "probably more than nine-tenths of every generation of the Hessian fly is destroyed." Another valuable paper from Mr. Herrick appears in the *Report of the Commissioner of Patents* for the year 1844, (p. 161–167), giving a most exact and particular history of the transformations of this insect, and a summary view of the various remedial measures that have been proposed. Both of these papers evince the close and patient investigation which the writer had made, and the utmost carefulness in announcing nothing beyond what he had clearly ascertained.

Dr. T. W. Harris's invaluable "Treatise on the insects of Massachusetts injurious to vegetation" was also completed in 1841. An excellent summary of all the leading facts pertaining to the histo-

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ry of this species, is given in this work, and its generic place, upon which point Mr. Herrick, Latreille and others had intimated doubts, is correctly settled.

The numerous agricultural periodicals of our country, abound with notices of this insect, more or less extended and valuable. To specify these notices in detail, at least as respects some of these periodicals, would require a reference to almost every number issued. Wherever important facts are derived from these sources, in the course of this essay, they are accompanied by a particular acknowledgment in each instance; an additional reference in this place, is therefore deemed unnecessary.

We close this section of our subject, with a condensed view of the depredations of this insect in different parts of our country, during a few of the past years; the materials for which, are furnished us, in those valuable documents, the yearly reports of the Commissioner of Patents.

In the year 1842, the ravages of the Hessian fly would appear to have been quite limited. Pennsylvania suffered the most severely. The wheat crop in this State is estimated to have been twenty per cent less than it was the preceding year, and of four different causes that produced this diminution, the fly is placed first. Some parts of Maryland, and also of Ohio, were visited by it. In the latter State it appeared to be increasing so much, that serious apprehensions were beginning to be felt respecting its future ravages.

In 1843, it was so abundant in western Pennsylvania in June, that it was thought it would diminish the crop twenty-five per cent. Through Maryland, and the great wheat-growing valley of Virginia, it was noticed at the same time as committing great havoc in many fields, and threatening a very decided failure in the crop; at harvest, however, the yield was found to be much better than was anticipated. In Ohio it was less injurious than in the preceding year. Upon some parts of Long Island it was observed, but in limited numbers.

In 1844, it seems to have been much more destructive than in either of the preceding years, and to have made its appearance pro-

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minently in some districts where it had been unobserved before. Thus, through all the northern parts of Indiana and Illinois, and the contiguous parts of Michigan and Wisconsin, it did much injury, and in many places occasioned almost a total failure of the crops. Near Goshen, Ia., a person writes, the fly is taking the wheat here at a dreadful rate, destroying some pieces entirely; some fields have been plowed up, and corn planted therein. The *Prairie Farmer* states that the wheat crop has suffered severely in various sections by the fly. In Will county, Ill., says the *Chicago Journal*, several entire fields of both winter and spring wheat have been destroyed by the Hessian fly. In Michigan also, it is reported to have made sad havoc, particularly in light sandy soils. From different places in this State, we are told as follows: "In some cases the injury was so severe, that the farmers had to plow up their fields and sow them over again." "There is not more than one-fourth of the surplus of 1843, owing to the wet season and the ravages of the fly." "The wheat crop is almost an entire failure. The insects took it last fall, and the rust in the spring, and then again the insects a second time." It is also stated that the same enemy had made its appearance in great force at the close of the season, in the early fall sown wheat. From different parts of Ohio, the crop was reported in May and June to be suffering considerably from the ravages of the fly. In the vicinity of Masillon, it had never been so destructive before, whole fields being entirely destroyed. In the neighborhood of Rochester, N. Y., also, the fields suffered some, particularly those having a sandy soil, and that were early sown. On the west end of Long Island, its ravages were also bad, many farmers not having more than half a crop. Both in the eastern and western sections of Pennsylvania, the fly lessened the produce of this year. In Bucks county it was particularly destructive. One person states, in the month of June, that where he had expected to gather 1,200 bushels or more, he could not now hope for 300. Though it is noticed on both shores of the State of Maryland, the injury done by it here appears to have been but slight.

In 1845, through those districts of Michigan, Indiana and Illinois, where it committed such havoc the last year, it is said by different persons to have wholly disappeared. The *Prairie Farmer*, however, states that it was still present, doing more or less injury all over the

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State of Illinois. Ohio sustained but little injury. It is not noticed north of Maryland, in the central parts of which State it is reported that on nearly all the light lands the Hessian fly made serious ravages, and in many instances rendered the crops totally worthless. In Georgia, moreover, its ravages in the counties around Milledgeville are said to have been dreadful; whole fields were totally destroyed, and others yielded not more than a fourth of an ordinary crop.

We regret that we have not at hand the requisite information, for tracing with equal precision the ravages of this insect during the past year, 1846. From such notices as we have casually observed in the public papers, we presume that through the country generally, it has been unusually numerous. In this vicinity, some fields have produced less than a fourth of what they would have done, but for the invasion of the fly last autumn, after an absence of over forty years, and its great increase in the spring. On sandy soils in Saratoga and the north-west parts of Rensselaer counties, several fields were observed early in July with the wheat stalks so "few and far between," that no harvesting of them would be attempted; whilst many others had been, at an earlier period of the season, plowed up and occupied with spring crops. In the western section of the State, it has also been quite destructive. The loss from the fly alone, says the *Genesee Farmer*, (vol. vii., p. 251,) will doubtless be at least 500,000 bushels. In those districts of Illinois, Wisconsin, and Iowa, which are contiguous to the Mississippi river, it appears to have been common, and also in eastern Pennsylvania. From a minute in the proceedings of the trustees of the Maryland Agricultual Society, we learn that "so great ravages have not been committed by the Hessian fly, since 1817. On some of the best land wheat has been plowed up, and other portions are so much injured, that they will not be worth harvesting. At least one-half of the crop of Talbot county has been destroyed." And in the upper counties of Georgia, it is said, "the fly has committed such ravages upon the wheat, as scarcely to leave enough seed for another year."

Its Name and Synonyms.

It is a somewhat trite but very true adage, that "names are things." Every one who has had occasion to search through files

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of our agricultural journals for information respecting any particular insect or other malady to which our crops or herds are subject, well knows what doubt and perplexity is often occasioned from having two or more names used by different writers for the same thing, and also from having two or more distinct things designated by the same name. To illustrate this, let us refer to the *Patent Office Report* for 1844, p. 26, where, in thirteen consecutive lines, we read as follows: "Near Onondaga county the wheat is said to be injured by the *grain worm*. . . . . In Schoharie we find complaints of the *weevil*. . . . . In Schenectady county the ravages of the *fly* were great. . . . . In parts of Columbia county it suffered from the *maggot*. . . . . In Dutchess a yellow *worm in the head* destroyed it." Of a truth, "what a host of enemies!" By way of climax, we only require some wiseacre who has never seen the insect, or lived within a hundred miles of it, to say, "Good people, you are all wrong; *wheat worms* is the correct name for your insect"—and we are furnished with a tolerably complete list of the popular synonyms of the *Cecidomyia tritici!* But who, not intimately conversant with its American history, would suspect this single species of being designated by such a profusion of terms. Who, on reading the page referred to, of the *Patent Office Report*, (and it is a correct transcript of the very words which are in popular use,) but would receive its statements as conclusive evidence that we had in eastern New-York at least four or five kinds of destructive insects preying upon our wheat crops. Such mistakes are the inevitable result of a diversity of names. So important, therefore, do we deem this topic, that we are induced to assign to it a distinct head.

It is very fortunate that no confusion of the kind just alluded to, has ever existed with reference to the species under consideration. Its popular name, *Hessian fly*, was first bestowed upon it by Colonel Morgan, soon after its appearance on Long Island. Some two or three of the earliest writers allude to it by the names of *Hessian bug*, and *Hessian insect*, but these designations were speedily dropped, and Hessian fly became universally the only name by which it was definitely distinguished, not only in this country, but in all parts of the world where the English language was spoken. Even when it was by every one deemed to be a native insect, and the epithet

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Hessian was therefore remarked by different writers as most inappropriate, still it was in such universal use, that no one ventured to propose that it should be changed. And this continues to be the only name by which it is spoken of at the present day, with one or two exceptions. In the Ohio Cultivator it is designated as the "wheat fly," and in late volumes of the Genesee Farmer the names Hessian fly and wheat fly are indiscriminately applied to it. The name "wheat fly," however, had been anteriorly and extensively applied to the *C. tritici*, upon both sides of the Atlantic, and was indeed the only common name of that insect in use among writers in agricultural journals and popular treatises, until recently, the perhaps more judicious name of "wheat-midge," has been bestowed upon it, by some of the best foreign authorities.*

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* We may here state some additional reasons which induced us in our former essay, to adopt the name "wheat-fly" in preference to that of "wheat-midge," the name by which the *C. tritici* has been designated by Mr. Curtiss, Westwood, and some other recent writers.

1. The insect itself, is, next after the wholly inappropriate name of "weevil," most commonly called "the fly," we believe, in all those districts where it is most abundant and has been longest known. It is never called "the midge." Why, then, should we speak one common name, and write another; or have in print as the common name, what we well know *is not* the common name.

2. No other insect in the world has a popular name better established than the Hessian fly. Both it and the *C. tritici* will undoubtedly continue to be common insects in this country, and very frequently spoken of. If one is called the Hessian *fly* and the other the wheat-*midge*, every person not well acquainted with this subject, will imbibe the idea that they are very different insects, their names being so dissimilar; whereas, they are most closely allied to each other.

3. It has often been remarked as a great desideratum, that the technical and common names of species in natural history, should correspond with each other; or, in other words, that the common names should in all cases where practicable, be translations of the technical names. *Cecidomyia tritici*, literally rendered in English, is *gall-fly of the wheat*; but inasmuch as this species does not produce galls, there is an obvious impropriety in retaining that word. *Wheat-fly* thus becomes the most direct translation of the technical name, that the habits of the insect admit of. No one will maintain that wheat-*midge* is a translation.

Dr. Webster is in error in saying the word "midge" is "not in use" at the present day. In the neighboring Green mountain districts, one or more most annoying species of *Simulium* that there abound, are daily designated in common conversation as the *midges*, or, as the name is often corrupted, the *midgets*. From Dr. Harris' treatise it appears that the same name is in popular use for the same insects in Maine. The term is limited in this country, we believe, exclusively to those minute insects, smaller than the musketoe, which suck the blood of other animals.

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The scientific name, *Cecidomyia destructor*, bestowed upon this species by Mr. Say, is the only one belonging to it, neither the name *Tipula tritici*, nor *Tipula vaginalis tritici* having any legitimate claims to be retained as synonyms. Mr. Say's name might at first view be thought liable to criticism, as being in no wise distinctive, many other species of Cecidomyians being also *destroyers*. Yet this species is so preëminent in that particular, as to throw the injuries inflicted by each of the others quite in the back ground. We hence think it will be conceded that the name is signally appropriate. Placed beside it, all its kindred are mere depredators—this alone is THE *destroyer*.

Its Characters, Transformations, and Habits.

As a general rule, the Hessian fly passes regularly through two generations annually. The first of these occupies the autumn, winter, and fore part of the spring, and is reared at the roots of the young grain, slightly below the surface of the ground. The second occupies the remainder of the spring and the summer, and is chiefly nurtured at the first and second joints of the straw. The time when its several transformations occur, is not perfectly uniform, being varied by the climate, the state of the weather, and perhaps other contingencies; and it is not improbable that individual specimens, placed in circumstances unfavorable to their developement, have their growth retarded so much as to require even a whole year to complete their metamorphoses.

First Generation.

THE EGG. *When and where deposited.*—The eggs of the first generation are deposited chiefly in the fore part of September. Dr.

But, inasmuch as we have another common word (gnat), applied to species having in this respect the same habit, in the paucity of terms which our language furnishes by which to designate insects, it is desirable that no two of these terms should be employed as synonymous. And as the night midge (Anglo-Saxon *mygge* or *micge*, a swarmer,) is appropriate for all those minute flies which assemble together in aeria dances, it would be well to adopt it as the generic or family term for all the small Tipulidæ, and apply the term gnat only to the Culicidæ or musketoe family. This appears to be the mode in which the English entomologists at present employ these words. And in this country it will probably be more easy to bring the new name, wheat-midge, into common use as the distinctive appellation of the *C. tritici*, than to have any one of the names now bestowed upon it supersede all the others.

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Chapman says the deposit is made from the latter end of August till the 20th of September, and most other accounts coincide with this, though some extend the time into October. On the 8th of October the fly was seen ovipositing in eastern Pennsylvania, in 1819, and it had wholly disappeared on the 11th. (*Amer. Farmer*, ii. 180). The deposit is doubtless made later, at the south, than in this vicinity. Mr. Tilghman's description of this process (*Cultivator*, viii. 82,) will convey so much more distinct a view to the general reader, than any other that has ever been published that we here insert it. He says, "By the second week of October, the first sown wheat being well up, and having generally put forth its second and third blades, I resorted to my field to endeavor to satisfy myself by ocular demonstration, if I could do so, whether the fly did deposit the egg on the blades of the growing plant. Selecting what I deemed to be a favorable spot to make my observation, I placed myself in position, by reclining in a furrow between two wheat lands. It was a fine, warm, calm forenoon; and I had been on the watch but a minute or two, before I discovered a number of small black flies, alighting and setting on the wheat plants around me; and so strong seemed to be their predilection for the wheat, that I did not observe a single fly to settle on any grass, or any thing within my view, but the wheat. I could distinctly see their bodies in motion when settled on the leaves or blades of the wheat, and presently one alighted and settled on the ridged surface of a blade completely within my reach and distinct observation. She immediately commenced disburthening her apparently well stored abdomen, by depositing her eggs in the longitudinal cavity between the little ridges of the blade. I could distinctly see the eggs ejected from a kind of tube or sting, or by the elongation of the body; the action of the insect in making the deposit, being similar to that of the wasp in stinging. After she had deposited, as I supposed, some eight or ten eggs, I easily caught her, upon the blade, between my finger and thumb..... After that, I continued my observations on the flies, caught several similarly occupied, and could see the eggs uniformly placed in the longitudinal cavities of the blades of the wheat; their appearance being that of minute reddish specks."

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Its appearance and characters.—The account of the eggs, and also of the worms of the Hessian fly, as given by Mr. Herrick, is drawn up with such scrupulous care, and is so full and definite in every particular, that we are constrained to enhance the value of this essay by presenting it entire. He says; "The eggs are laid in the long creases or furrows of the upper surface of the leaves of the young wheat plant. While depositing her eggs, the insect stands with her head towards the point or extremity of the leaf, and at various distances between the point and where the leaf joins and surrounds the stalk. The number found on a single leaf, varies from a single egg up to thirty, or even more. The egg is about a fiftieth of an inch long, cylindrical, rounded at the ends, glossy and translucent, of a pale red color, becoming, in a few hours, irregularly spotted with deeper red. Between its exclusion and its hatching, these red spots are continually changing in number, size, and position; and sometimes nearly all disappear. A little while before hatching, two lateral rows of opaque white spots, about ten in number, can be seen in each egg. In four days, more or less, according to the weather, the egg is hatched."

THE LARVA. *Growth of the worm, or active larva.*—Mr. Herrick's excellent description is continued as follows, "The little wrinkled maggot, or larva, creeps out of the delicate membranous egg skin, crawls down the leaf, enters the sheath, and proceeds along the stalk, (see fig. *m*,) usually as far as the next joint below," (fig. B. §§,) or, in other words, *to the base of the sheath*, which in the young autumnal wheat, is at the crown of the root, (fig. A. §.) "Here it fastens, lengthwise, (fig. *n* and *o*,) and head downwards, to the tender stalk, and lives upon the sap. It does not gnaw the stalk, nor does it enter the central cavity thereof; but, as the larva increases in size, it gradually becomes embedded in the substance of the stalk. After taking its station, the larva moves no more, gradually loses its reddish color, and wrinkled appearance, becomes plump and torpid, is at first semitranslucent, and then more and more clouded with internal white spots; and when near maturity, the middle of the intestinal parts is of a greenish color. In five or six weeks (varying with the season,) the larva begins to turn brown, and soon becomes of a bright chestnut color, bearing some resemblance to a flax-seed, &c."

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Its characters.—When freshly taken from the root of the wheat the mature worm (fig. *g*,) measures about fifteen hundredths of an inch (0.15) in length, by about 0.06 in breadth. It shows no signs of life when placed upon paper and turned over with a needle point. It is soft, glabrous, shining, white, oval and apparently composed of but nine segments, although twelve can often be distinctly perceived before its growth is completed. These are quite slightly marked by faint transverse lines of a greenish brown hue. Its under side is flattened, and has an oblong grass green cloud or spot in the middle, placed longitudinally. No regular contractions or crenatures occur along the margin to mark the segments, though after the worm has laid exposed to the air an hour, the color of the transverse lines above spoken of becomes bleached out as it were, and then, perhaps from the worm's having become somewhat dried, faintly impressed transverse lines are perceptible at the junction of each of the nine segments: faint longitudinal striæ are also discernable, as though produced by the pressure of the parallel veins or ribs of the sheath and culm, between which the worm had laid.

Its mode of feeding.—We have hitherto sought in vain to ascertain, by ocular and microscopic examinations, how it is that the worm imbibes its nourishment from the stalk. To expose it to view, we are obliged to place it in circumstances so unnatural to it, that it apparently refrains from feeding. That it "gnaws" the stalk, as some writers in our agricultural papers, and some compilers of popular treatises inform their readers, is an error so gross as scarcely to deserve notice. Some have supposed that it absorbs its nourishment through the pores of its skin; but we incline to the belief that Dr. Lee's opinion is nearest the truth of any that has been hitherto advanced—that it takes in its nourishment by suction, in a manner more analogous to the leech than any other familiar object. (*Gen. Farmer*, vii. 225).

Its effects upon the crop.—The autumnal attack of the fly is in a double sense a *radical* one. Each particular shoot at whose root one or more of these larvæ nestles, is commonly destroyed by the time the worm has attained its growth. The presence of these worms is therefore readily detected by an examination of the young wheat in October or November. Individual shoots will be found

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here and there in the field, withered and changed to a light yellow color, (fig. A. †), strongly contrasting with the rich green of the vigorous uninjured plants, (fig. A. *). The frost or some other casualty may cause the ends of some of the other leaves to be of a pale yellow color, but here the whole plant is of that hue; and where a field is badly infested this yellow "sickly" aspect is perceptible from a distance. On examining the withered plants, the worm, or flax seed if it has advanced to that stage, can be readily found. It is situated a short distance below the surface of the earth, at the crown of the root, (fig. A. §). One or two radical leaves start from this point, their bases forming a cylindrical sheath around the central or main shoot, which as yet is but in its infancy. It is within this sheath, at its base, that the worms repose, one, two, three, or more, and by imbibing the nutricious juices of the young shoot, cause it to wither and die. The mechanical pressure of the larvæ, so frequently spoken of as impeding the circulation of the fluids of the plant, and hereby causing it to perish, I think has had too much importance assigned to it, the young plants being so soft and pliant that they would readily accommodate themselves to this pressure, if they received no molestation beyond this.

Is the crop ever benefitted by it?—The vigor and luxuriance of the uninjured shoots from the same root, contrasts so strongly with the wilted and feeble appearance of those attacked by the worm, as to have led some to believe that the unaffected shoots were stimulated to a more rapid and robust growth in consequence of the *pruning* given by the fly; and that a better crop is thus sometimes produced, by the presence of a moderate number of these worms among the wheat plants. The correctness of this opinion we very much doubt. The worm is nourished and reared upon those very fluids that are absorbed by the plant and elaborated for its own sustenance and growth. Every particle of this nutricious juice, therefore, that is consumed by the worm, is a direct loss of just so much material that would otherwise become straw and grain. At all events, we think our farmers generally will prefer that nature should be left to her own undisturbed course in rearing their wheat plants, and will be by no means solicitous to have this renowned guest take any part in the operation.

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Its change to a "flax seed" or dormant larva.—When the worm, or active larva, has fully completed its growth, a slight diminution in the dimensions of the inner soft parts of its body commences, in which the outer and harder skin does not participate, this latter retaining its original full size. The result of this contraction is, that the worm gradually cleaves from its outer skin. If examined with a microscope when this change has recently commenced, a slight translucent space is observable at the head end, and a larger and more obvious one at the pointed or tail end, plainly indicating that the enclosed worm does not entirely fill its outer skin. This contraction continues, until the worm becomes entirely separated from its outer skin, and lies within it like the finger within a glove. The outer skin at the same time changes in color. From its original whiteness and transparency, it gradually becomes opake, brown, and finally of a dark bay or chestnut color. Though *much less flat* than a flax seed, its resemblance in color, size, and form, to that familiar object, is so striking as at once to be remarked by every one.

Characters of the flax seed, or larva case.—Different specimens of these flax seed like larva cases (fig. *h. i. j.*) vary in length from 0.13 to 0.19 and in breadth from 0.05 to 0.08. They are shining, cylindrical-oval, more obtusely rounded at the lower or head end than at the other, which is generally attenuated into an acuminated point or small projecting papilla. They are commonly composed of but nine obvious segments, and these are but slightly indicated by very faint acutely impressed transverse striæ—a similar transverse stria, but still more faint, being sometimes perceptible (fig. *h.*) across the middle of some of the segments. Longitudinal impressed striæ are sometimes present, (fig. *j.*) more conspicuous than the transverse and reaching a part or the whole length of the worm; and between these the surface is minutely acuducted (i. e. appearing as if lightly scratched by the fine point of a needle) longitudinally—all these longitudinal impressions being perhaps caused by the pressure of the veins and fibres of the plant, against which the worm has been imbedded. On the under side, (fig. *i.*) towards the head end, the case is flattened, as if pinched together, so much so that the anterior segment seems a mere empty fold of the membrane, without any inflation sufficient to make room for internal

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viscera. At this end is often observable one or two little brush-like granules, resembling those on the soles of the feet of some carabidous insects. (One of these is indicated on the anterior edge of fig. *i*.) Are these the relics of the suctorial mouth of the larva? This larva case is comparatively tough and leather-like at first, but becomes more brittle and also darker with age.

Characters of the dormant larva.—On carefully opening the larva case just described, a worm (fig. *k*.) is found within it, scarcely different in any respect from what it was immediately before entering upon this flax seed state. It has the same oval form, opake milk-white color, and green, cloud-like visceral spot or line beneath. The nine segments into which it appears divided, however, are now much more distinctly marked than they previously were, the transverse lines being more deeply impressed, and the margins showing corresponding crenatures. No traces of the members of the future fly are yet discernable. The insect now undergoes no further change, for a period of five months or more. Enveloped in its flax seed like mantle, and reposing at the root of the now lifeless grain, it is buried beneath the snows of winter. Over one-half of its entire term of life is therefore passed in this state.

Error in previous accounts.—This is the stage of this insect, which has been spoken of by all preceding writers as its pupa or crysalis state. Upon a close observation of *Cecidomyia tritici*, the writer succeeded in discovering that that species had, what some had conjectured, but none had actually observed, a regular pupa form, identical with that of other species of Cecidomyia, whose metamorphoses had been fully described. It hence appeared necessary to distinctly mark that long period of inactivity which intervenes in the wheat-fly, after the larva has completed its growth, and before it enters its pupa state; it was therefore, during this state of its life denominated a dormant larva, in my essay upon that species. It occurred to me whilst writing out that essay, that the dormant larva state of the wheat-fly, was exactly analogous to the flax seed state of the Hessian fly, and in a note, my suspicions were expressed that the real pupa of the Hessian fly had never been detected. The ample opportunities which I have since enjoyed for investigating

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this species, have enabled me fully to trace out this point in its transformations, and to show that it is not till near the close of its flax seed period of existence that the Hessian fly puts on its pupa form. In penning the note just alluded to, I had overlooked a passage in Mr. Herrick's last paper, from which it is obvious that he has seen the real pupa of the Hessian fly, although he still speaks of its pupa state as commencing when the worm becomes a flax-seed. Inaccuracies of this kind, which to the general reader appear so trivial as scarcely to require correcting, are liable to lead to important errors. Of this, we have a striking illustration in this very instance. Mr. Westwood, on opening the flax seeds contained in the wheat straw from Germany, came upon "the larva," where, according to all the accounts of the Hessian fly he ought to have found *the pupa;* he therefore at once draws the important inference, that the German insect cannot be the Hessian fly of America. Indeed it is surprising, that so plain a fact as this, that it is a worm and not a pupa which is enveloped in the flax seed case of our insect, has been so wholly overlooked by every one who has hitherto written upon this subject.

The Pupa. *When formed.*—On the access of the first warm days of spring, as soon as the weather becomes sufficiently genial for some of our earliest plants to put forth their blossoms, the larva of the Hessian fly is rapidly stimulated to maturity. The present year, so early as the 21st of April, most of the insects were found to have taken on their pupa form. As this season was more forward than usual, this may prove to be an earlier date than is common for this occurrence; a more accurate criterion by which to indicate it definitely, is no doubt by a reference to the progress which vegetation has made at this time. We may therefore state, that in all parts of our country, the Hessian fly will probably be found in its fully formed pupa state, about a week after the liverwort, (*Hepatica triloba*,) the trailing arbutus (*Epigœa repens*), and the red or swamp maple (*Acer rubrum*,) first appear in bloom, and simultaneously with the flowering of the dry strawberry (*Comaropsis frugarioides*), the common five-finger (*Potentilla canadensis*), the hill-side violet (*Viola ovata*), &c. It continues in this state about ten or twelve days, and then sends out the winged fly.

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Its characters.—The flax seed shell has now become quite brittle, breaking asunder transversely if rudely handled, and one of its ends slipping off from the inclosed pupa like a thimble from the end of the finger. On removing the pupa (fig. *l.*) from its case, it is found to be 0.13 long by 0.05 broad, of an oval form, with rounded ends, and having its limbs and body enveloped in separate membranes. The thoracic portion is slightly narrower than the abdominal. The wings do not quite attain the middle of the length of the body. The outer pair of feet come out from under the tips of the wings, and reach to the anterior margin of the penultimate abdominal segment, slightly curving inwards at their tips. The next pair of feet are somewhat shorter, and the inner pair are shorter still. They all lie in contact with each other, and in a direction parallel with the body. The abdominal segments are distinctly marked by strongly impressed transverse lines, and are of a milk-white color, the thorax and head being of a delicate pale pink-red, and the feet translucent-white. On the anterior margin is a chestnut-brown crescentiform mark. It will hence be perceived, that in all the details of its form, the pupa of the Hessian fly coincides precisely with those of the other species of this genus which have been described.

Its change into a fly.—The time for its final transformation having arrived, the pupa breaks open and crawls from its puparium or flax seed case, and works its way upwards within the sheath of the leaf, until it arrives at some cleft in the now dead, brittle and elastic straw; through this cleft it gradually, by bending from side to side, crowds its body until all except the tip of the abdomen is protruded into the air, the elasticity of the straw causing it to close together upon the tip of the abdomen, so much as to hold the pupa in this situation, secure from falling to the ground; and as if to preserve the body in a horizontal position, the feet are slightly separated from the abdomen, and directed obliquely downwards, with their tips pressed against the side of the straw, thus curiously serving, like the brace to the arms of a sign post, to support the body from inclining downwards. Thus securely fixed, and now freely exposed to the drying influence of the atmosphere, the outer membrane of the pupa speedily exhales its moisture, and as it becomes dried, cracks apart upon the back part of the thorax; out of this cleft the inclosed fly protrudes its head and thorax more and more, as it gra-

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dually withdraws its several members, the antennæ, wings and legs, from the cases in which they are respectively enveloped—a process analogous to that of withdrawing the hand and its several fingers from a tight glove; until at length entirely freed, the now full-fledged and perfectly formed fly leaves its pupa skin and mounts into the air.

Peculiarity in its metamorphoses.—It is sufficiently apparent from the account that has now been given, that the Hessian fly differs notably from all its congeners in one important point in its transformations. From all the observations that have been hitherto made, the cecidomyians correspond with the other tipulides in this prominent particular—that their pupæ are naked. Other species, at least many of them, after completing their growth, cleave from their skins in the same manner that the Hessian fly does, but when the separation is formed, the inclosed worm invariably crawls from and forsakes its larva case. It is thus, even, contrary to what has been hitherto supposed, with the *C. tritici.* Since my essay upon that species was published, I have clearly ascertained that the mature or dormant larva does cast its skin. Indeed, this fact is distinctly related by Dr. Harris, in his treatise, to whom is due the credit of having first announced it. His statement had escaped my observation when previously alluding to this subject. So far as I am aware, moreover, the cast skins in the several species are translucent, and of a membranous texture. In the Hessian fly, however, it becomes opake, changes its color, and is of a firm or coriaceous texture. The inclosed worm, also, does not leave it, but remaining, eventually changes within it to a pupa, the same case thus forming its puparium. Its metamorphosis thus approximates it to the Muscidæ or true flies, the Stratiomidæ or soldier-flies, &c., and its pupa, in technical language is "coarctate" and not "incomplete," like the pupæ of the other cecidomyians. Should usage, therefore, settle down upon the name *midge* as distinctive of the minute tipulides, there will still be a marked propriety in continuing to this species its old name, Hessian *fly.**

* I doubt, however, whether the Hessian fly will continue to be the sole member of this genus having a coarctate pupa. Quite recently a species has occurred to my notice, analogous to the Hessian fly flax seed in every point that I have been able to

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THE FLY. *Its Characters.*—In the female, (fig. 3,) the *head* is flattened globular, and black throughout. The *antennæ* (fig. *e*,) are about half as long as the body, and composed of sixteen joints, each of a cylindric-oval form, the length being about double the diameter; each joint is clothed with a number of hairs, of which those towards its base are slightly more robust and longer, about equalling the joint in their length, and surrounding it in a whirl. The joints are separated from each other by very short translucent filaments, having a diameter about a third as great as the joints themselves. The terminal joint is at least a third longer than the preceding ones. The two basal joints of each antenna are globular, and compact or not separated by an intervening filament, and exceed the following joints in diameter. The *palpi* (fig. *f*,) consist of three obvious joints, clothed with very short minute hairs. The two last joints are cylindrical, nearly equal in size, and about twice as long as broad: the basal joint is more short and thick. The *thorax* is oval, broadest immediately back of the wing sockets, and black. The *scutel* is of the same color, projecting, and slightly polished, with the suture surrounding it sometimes fulvous. The *poisers* are dusky. The *abdomen* is elongate-ovate, its broadest part scarcely equalling the thorax in diameter; it is of a black color above, more or less widely marked at the sutures with tawny-fulvous, and furnished with numerous fine blackish hairs. The *ovipositor* is rose-red, and slightly exserted commonly in the dead specimen; it is susceptible of being protruded to a third of the length of the abdomen. The *wings* are slightly dusky, and fulvous at their insertion into the thorax. Their form and neuration is identical with that of the other species of this genus, except that the slight connecting nerve between the mediastinal and postcostal is commonly wanting, and the medial and forks of the anal nerves are extremely faint for a species of Cecidomyia so large as this. The legs are

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detect, except that its larva case is of a pale brown color, untinged with rufous or castaneous. It infests the *Agrostis lateriflora?*, numbers dwelling together in an imbricated gall, somewhat resembling the fertile aments of the hop, though larger, and connected with the main stalk by a short pedicel which is inserted into one of the lowest joints of the culm. From the coriaceous texture of the larva case, I suspect the inclosed worm will not leave it, until transformed to a pupa and upon the point of evolving the perfect fly.

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pallid brown, the tarsi black, the femurs paler at their bases. The several pairs of legs equal each other in length, being about 0.24 long when extended, of which length the tarsus embraces one-half. The several joints of the tarsus are of the same relative length as in other species; the short basal joint however, is much more indistinct than usual, insomuch that a minute examination of several specimens is required ere one is met with showing this joint distinctly.* This character, and also the neuration of the wings, clearly shows that this species belongs to the genus *Cecidomyia*, and not to Macquart's genus *Lestremia*, nor Meigen's *Lasioptera*.

In the male, the *antennæ* (fig. *d*,) are three-fourths of the length of the body, with the joints of a short oval and nearly globular form, the diameter hardly equalling the length: each joint is surrounded with a verticil of longish hairs. The terminal joint does not differ from the preceding ones. The two basal joints are compacted together as in the female. The antennæ diminish very slightly in diameter towards their tips. The filaments separating the joints are smoky-translucent, nearly as long as the joints, and about one-third of their diameter. The *abdomen* (fig. 2,) is cylindric or slightly tapering towards its tip, and consists of seven joints beside the terminal one, which (viewed from beneath, vide fig. *c*,) consists of a transversely oval joint, giving off two robust processes, armed with incurved hooks at their tips; and between these processes at their base are two exceedingly minute papillæ. As ordinarily seen, in the living specimen, the abdomen is of a brownish-black color, more or less widely marked at the sutures with pallid fulvous or smoky whitish lines. In all other points the male coincides with the female in its characters.

Its duration.—That the fly which comes out in the spring continues but a very short time, I infer from the following data. A number of wheat plants, containing pupæ, were transplanted into a box of earth, April 21st, and inspected daily. On the morning of May 1st, about half of them were found to have sent out the perfect fly

* How well the engraver has executed his task will be obvious by passing a magnifier over the plate. The joints of the tarsi in fig. 3, and other minute details, scarcely, if at all perceptible to the naked eye, will then be distinctly recognised.

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within the preceding twenty-four hours. On repairing to the field whence these plants were taken, the fly was found to be out in large numbers. At every step, a dozen or more would arise from their coverts, sluggishly fly a few feet, and alight again. In other fields, where none of the flax seeds could previously be found, an occasional fly was met with, on the same day. A week after this, on a thorough examination, no flies could be found, nor were but two specimens afterwards met with, until the coming out of the summer brood.

Second Generation.

After the full details that have already been given, but a few words will be required under this head. About the first of May the fly appears, and deposits its eggs upon the same crop of grain that has already reared one brood, and also upon any spring wheat that is sufficiently forward for its purposes. The radical leaves of the winter wheat are now more or less withered, and the fly therefore selects the more luxuriant leaves that have put forth above these. The worm hatches, and again makes its short journey to its future home, at the base of the sheath; it consequently now nestles at the first and second joints of the young stalk, and is sometimes, though rarely, as high as the third joint. Even before the worm reaches the base of the sheath, it has frequently grown nearly to its full size, (as shown, fig. *m*.). The stalk has now attained such vigor and hardiness that it is seldom destroyed by this spring attack. A slight swelling, immediately above the joint, (fig. B. §§,) commonly indicates the presence of the larva beneath. This is a fact which has been overlooked, or at least not distinctly stated by writers hitherto. We only find it noticed by Mr. Bergen, (*Cultivator*, viii., 133,) who informs us that in a crop of barley which was destroyed by the Hessian fly, many of the stalks were "at the joints as thick as a man's finger." The insect is therefore a true *gall*-fly, although when but one larva succeeds in reaching the joint, the swelling caused by it is but little if at all apparent. More commonly however, the straw becomes so weakened, that it is unable to sustain the weight of the wheat head, and it accordingly bends down (as represented, fig. B††,) with the force of the wind and rains. The appearance of a badly infested field, as harvest time approaches, cannot better be

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described than in the words of M. Kōllar. The grain looks as though a herd of cattle had passed through it, so broken and tangled together is the straw. The worm attains its growth and enters its flax seed state about the first of June, and the flies of this second generation commonly come forth about the last of July and in August.

Miss Morris's theory.—We do not deem it necessary to go into a detailed examination of the theory revived by Miss Morris in 1840, that the eggs of the Hessian fly are deposited in the grain, and that the larva lies in the centre of the culm. We suppose this theory to be abandoned by its late advocates, from the fact that for four years past, we have met with no farther attempts to sustain it. To us it appears manifest that the lady was widely misled at the very outset of her observations by an error in Mr. Say's account, to wit, that "the perfect fly appears early in June." Were this the case, she might well enquire, "Where are the eggs placed? Surely not in the old and dying stalk .... and there is no young wheat growing from June until September." The flies which Miss M. saw in June, 1836, "in countless numbers, hovering over and settling on the ears of wheat," we cannot but suspect were the same species which in this section of country appears in such swarms upon the heads of wheat about the middle of June, that it has been for years mistaken hereabouts for the wheat-fly or midge, (vide *Transactions N. Y. State Agr. Soc.*, vol. v., p. 260 and 267). In size and color it does closely resemble the Hessian fly, and might readily mislead any one just commencing their observations. That occasional specimens of the Hessian fly may be taken in June we do not doubt; but that the main brood comes out, deposits its eggs, and disappears, a month earlier than this, we are quite confident, from our own observations as already related, as well as from the testimony of almost every writer who speaks definitely upon this point. Those few larvæ which have been found in the centre of the wheat culm, were not unlikely of some other species, since in this particular its habits correspond with those of the *Cephus pygmæus*, the *Chlorops pumilionis*, *&c.* That the Hessian fly larva resides in the sheath of the culm, and not in its centre, we feel confident Miss M. has herself become convinced ere this day:—so earnest and candid an enquirer

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after truth, and one so capable of giving to every fact its due weight, cannot long remain in error, upon a point so susceptible of demonstration as this.

Its Parasites.

It is well known that one of the most effectual means for keeping the Hessian fly in check and preventing it from literally *swarming* all over our land, has been provided by nature herself. Other insects have been created, apparently for the very purpose of preying upon this, and thus preventing it from becoming inordinately multiplied. The world is indebted to Mr. Herrick for much interesting information respecting these insects, the result of his own accurate and patient investigations. As we purpose, should we succeed in more fully tracing out the history of these and other Cecidomyian parasites, making them a subject of a separate memoir at some future day, we refrain from devoting to them any considerable space in the present paper. The general reader, however, will scarcely pardon us, if we omit all allusion to them. We therefore subjoin a brief sketch of the contents of this part of Mr. Herrick's article.

The Hessian fly is preyed upon and devoured by at least four other insects. When its eggs are layed upon the wheat leaves, they are visited by an exceedingly minute four winged fly, (a species of *Platygaster*,) which punctures the egg and deposites in it four or six eggs of its own; the Hessian fly worm hatches, grows, and passes into its flax seed state with these internal foes feeding upon it: it now dies, and its destroyers in due time escape from the flax seed shell. Three other minute four winged flies, or bees as they would be called in common language, destroy the fly when in its flax seed state. The most common of these, by far, is Say's *Ceraphron destructor*. Alighting upon the wheat stalks, instinct informs them precisely where one of these flax seeds lies concealed. They thereupon "sting" through the sheath of the stalk, and into the body of the worm, placing an egg therein, which hatches to a maggot, lives upon and devours the worm. Such are the means which nature has provided for preventing this pest from becoming unduly multiplied. And so efficient and inveterate are these foes, that more than nine-tenths of all the Hessian fly larvæ that have come

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into existence, are probably destroyed by them, Mr. Herrick thinks, and we have strong reasons for believing that his estimate is within the truth.

From the date given by Mr. Herrick of his first discovery of the egg parasite, we know that the first or autumnal generation is attacked by it. Whether it preys upon the second or spring generation also, does not so clearly appear. From our own observations, and the well known habits of the other parasites, it would seem to be principally upon the second or spring generation which they prey. Indeed we can scarcely conceive it possible for them with their short ovipositors to reach the flax seeds of the first generation, buried as these are beneath the surface of the earth and reposing at the roots of the young wheat. That these parasites are surprisingly abundant, and destroy immense numbers of the spring generation, any one can easily ascertain by collecting the infested straw at harvest time, and securely enclosing it, to preserve all the insects which hatch from it. He will thus obtain parasites in abundance, and only occasionally a Hessian fly. On the other hand, numbers of the young plants taken up by us in April, evolved nothing but Hessian flies. The observations of a single season, we are aware, cannot be relied on for establishing a point like this. But they force upon us the suspicion that it is chiefly the second generation that is infested by parasites, and that the first is comparatively free from them.

Remedies.

"An *effectual remedy*" against the Hessian fly, which has been so much inquired after and talked about, and by which term we suppose is meant some *specific* which will infallibly destroy or drive away the insect, or protect the crop from its ravages, never has been and probably never will be discovered. In truth, we regard the idea that a remedy of this character exists, as being equally absurd with a belief in the philosopher's stone. There is probably no such thing as sure and infallible specifics against any of the insects which invade our crops, any more than there is against those diseases which attack our persons. Still, believing this, we also believe that there is no noxious insect but what, when we closely study into its habits we can invariably discover some one or more ways of opposing it, by

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which we can with certainty to a great extent, if not entirely, shield ourselves against its depredations. Thus it is with the insect under consideration. There is no remedy with which we can "doctor" it away—no charm with which we can say to it, "vanish presto;" yet there are measures, which employed, will guaranty fair crops, when if not reserted to, no wheat will be gathered. Of this fact we are well convinced, both from personal observations, and the concurrent testimony of a cloud of witnesses.

A consideration of the various remedial measures which have been proposed, is therefore a subject of surpassing interest to every cultivator of the soil. We shall hence proceed to review them in detail, treating first of those, which, after a careful consideration of this topic, we regard as the most important.

1. *A rich soil.*—This is a safeguard which has been strongly urged by almost every one who has written upon this insect. Indeed an inspection of different fields of wheat in a district where this enemy is present, cannot fail to impress upon the observer the utility and importance of this requisite. Other things being equal, the crops on impoverished lands invariably suffer the most. Hence those on sandy soils, which retain the strength of fertilizing agents less than other soils, have in numerous instances been remarked as most severely devastated. A striking contrast, even, may very often be perceived in different parts of the same field. The summits of the knolls and ridges, situations where the soil is the most meagre, almost invariably show the greatest amount of damage; whilst the intervening hollows, to which the fertilizing matters are washed from the surrounding acclivities, sustain a comparatively slight if at all sensible injury. Yet the latter situations are the very ones which insects of this family are known to be most prone to frequent, being more low, shady and damp. There can be no doubt, therefore, but the fly is as numerous in the hollows of a grain field, as upon its ridges; and that it is only in consequence of the greater fertility of the former situations, that the crop there, is enabled so effectually to withstand this enemy. Indeed, the farmers themselves, in districts where the fly has prevailed, have all learned from experience, that it is only upon fertile lands that it will do to sow their wheat. Hence Ezra L'Hommedieu long ago intimated that the

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Hessian fly on Long Island, by driving the farmers to manure their lands, instead of a curse had actually been *a blessing*. He says, "the land in Suffolk county and other parts of Long Island, was easily tilled, and by continual cropping with wheat was so reduced, that on an average not more than five or six bushels was raised to the acre. This mode of husbandry was still pursued, and although the land was gradually impoverished, the farmer found the crop, although small, more than would pay for his labor and expense. The Hessian fly put an end to this kind of husbandry, and in that respect has proved a blessing instead of a curse; no other way being found to prevent the injury done by this insect, but by highly manuring the land." (*Trans. N. Y. Soc. for Prom. of Agric., &c.*, i. 57). A writer in Delaware also states that the universal predilection there, was to have *large* rather than *rich* fields of wheat; that this insect was counteracting this, by compelling them to cultivate less land, in order to cultivate it well; and that its tendency consequently was, to make our population more dense, by making it the interest of every man to own no more land than what he could manure highly and till carefully. (*Carey's Museum*, xi. 301). We thus have, even in the devastations committed by this destroyer evident indications of that

"All partial evil, universal good,"

which is every where manifest in the works of the Supreme Architect of nature. It is doubtless the additional strength and vigor enjoyed by plants growing upon a rich soil, which enables them to withstand the depredations of this insect. Those shoots which are first sent up from a kernel of seed, are the ones which are commonly attacked and destroyed, and in an impoverished soil the seed itself thereupon perishes; whilst in a rich soil, its vitality continues, and other shoots are sent forth by it, which grow vigorously and unmolested. In the spring attack also, the weak and slender stalks growing upon a poor soil, are much more liable to become broken and fail of maturing any grain, than the large, robust, well nourished stalks of a fertile soil. Hence a rich soil enables a plant to elaborate a sufficient amount of fluids for its own sustenance, in addidition to that which is abstracted from it by a few of these insects. We therefore regard this as a primary and indispensable measure, and one which must accompany others next to be considered, in order to their full success.

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2. *Late Sowing.*—This measure also comes to us sanctioned by the almost unanimous recommendations of writers; and we regard it as one of the most efficient, as it certainly is the most facile of any that can be resorted to. It is universally admitted that it is the earliest sowed fields that are always the most infested; and we cannot but suspect that the present visit of this enemy to this section of the country, after so long an absence, has been invited by the general practice of early sowing, resorted to by our farmers under the probably incorrect idea of hereby escaping from the depredations of the wheat-fly. Just before harvest, our attention was directed to two contiguous fields of wheat in the town of Stillwater, one of which was seriously injured by the Hessian fly, whilst in the other not a solitary straw broken by the insect could be found. The only cause to which this striking contrast could be imputed, was, that the latter field had been sowed a fortnight later than the former one. Analogous instances have often occurred to the notice of every observing person living in districts where the fly has been present. Such cases, however, must not be deemed to prove so much as they at first view appear to. It is not probable that the fly had entirely ceased from depositing its eggs before the second of the above fields had become forward enough for its purposes. Had the sowing of the first field been delayed a fortnight, both fields, it is probable, would have suffered equally. The whole injury that fell upon the first field, would thus have been divided between it and its neighbor. And so in all cases, we presume that the field which is the earliest, attracts all of the insects in its immediate vicinity, and these finding all the accommodations they desire there, have no occasion for going elsewhere. For a more extended elucidation of this topic, see the *American Farmer*, vol. ii. p. 167. Two objections have been urged against late sowing; the liability of the young plants to "winter-kill," and of the crop when near maturity to be attacked by "the rust." There is little danger of the first of these casualties, we suppose, upon porous soils, it being a disaster almost peculiar to stiff clays, which retain a large amount of moisture at their surface. In such soils, therefore, it may be advisable to resort to the plan employed in some parts of England, namely, sowing only on a newly turned over sward, the grass roots in which

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serve to bind the soil together in such a manner as to retard its "heaving" by the frost. (*Fessenden's Complete Farmer*, p. 114), This disaster, moreover, is guarded against in a great degree by sowing only upon a very fertile soil, whereby a quick and vigorous growth is secured, and the young plants are thus enabled to acquire sufficient strength of root to withstand the winter's frosts. The same expedient, also, by insuring a rapid growth and an early maturity of the crop is the best safeguard against the rust, a disaster to which late crops only are ordinarily liable. Upon rich land, therefore, scarcely any scruples need be entertained with regard to late sowing. If a neighboring field has been already sowed and the season is favorable for its vegetation, it will be safe to commit the seed to the ground within a week or two thereafter, as all the insects in the vicinity, unless they are present in immense swarms, will be attracted to and remain in the earlier crop. About the last of September is probably as late as it will be judicious to defer sowing wheat in this climate; and in most seasons this will secure it from any serious attack of the fly. Although when it comes forward, the season for the deposition of the eggs of the fly may not in some years be entirely over, it must be rare that a number of these sufficiently large to be materially injurious, will be laid; but should that at any time be the case, other remedies still can thereupon be resorted to, to counteract the evil.

3. *Grazing.*—This measure is alluded to as worthy of attention, in the first account of this insect published in this country, where the fact is stated, that "by feeding the crop very close in the winter and spring, if the land is rich it will again spring up, and the worms do not much injure the second growth." It is plain that a close fed crop will furnish few leaves for the fly to place its eggs upon, and these leaves will be commonly consumed before the eggs are hatched. Gen. Cocke directed public attention strongly to this measure in 1817, and six years subsequently states that full experience had amply confirmed him in his estimate of its efficacy.—(*American Farmer*, v. 241). If in autumn it be omitted till after the eggs are hatched, and the worms have descended to the root, it can obviously be of little or no service. When, therefore, an attack of the fly is feared, as the exact time of the deposition of the eggs is somewhat variable in different seasons, it will be necessary to

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watch the young wheat, as soon as two or three blades from each root appear; and if the fly is discovered profusely depositing its eggs, sheep or other stock should at once be turned upon it, in such numbers, if possible, as to eat down the crop in a few days. The eggs will thus be destroyed, and the favorite nidus of the fly for continuing this deposite, will be effectually broken up: it will thus be compelled to resort to other quarters. The same process may also be repeated in the spring, if found necessary. No injury to the crop need be apprehended from its being thus grazed down, if the soil is of due fertility — it soon and entirely recovers from this operation. Moreover, if the soil is poor and impoverished, the fly will be sure to injure it far more than what the sheep will do. We cannot, therefore, but regard this as a most judicious and important measure, if seasonably resorted to. The intelligent wool grower, will scarcely require to be informed, that sheep taken from their ordinary walks, should at first remain upon the rank feed of the wheat field but an hour or two of a day.

4. *The roller.*—Passing over the grain with a heavy roller, is a remedy in commendation of which several writers concur, supposing that many of the eggs upon the leaves will thus be crushed. Col. Morgan was in the habit of both rolling and grazing his wheat fields, before the Hessian fly appeared in his vicinity; and as his crops were much less injured than those of his immediate neighbors, he attributes his escape to these causes. If there be any foundation for Mr. Smeltzer's opinion, that certain varietes of wheat are fly proof, because their leaves grow horizontally instead of inclining upwards, assuredly by a repeated use of the roller every kind of wheat may be made fly proof. No doubt this measure is a judicious one, particularly on fields that are so smooth and free from stones that almost every plant will receive a firm pressure by the operation. If resorted to, it should obviously be done at those times when the eggs are newly laid upon the leaves. After all, is not the efficacy of the roller, at least in part, owing to its loosening and dislodging the eggs from their position and causing them to drop to the ground, where the worm, hatching, is unable to find its way into the sheath of the young plant? This point merits investigation; for if there is any truth in the suggestion, sweeping the plants with a broom or

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some similar implement, will probably brush off much greater numbers of the eggs than passing a roller over them can do.

5. *Mowing.*—Mr. Goodhue, of Lancaster, Wisconsin, in a communication in the fifth volume of the *Prairie Farmer*, suggests that the larvæ concealed within the bases of the leaves, may be destroyed by mowing the wheat, and feeding it to the stock. We deem this proposal a valuable one for exterminating the second or spring brood from a wheat field. In those cases where the worms are discovered in the month of May, to be fearfully numerous at the joints of the young stalks, there can be little doubt but that on smooth grounds the scythe may be so used as to take off almost every spear below where the larvæ are lodged; and that thus a second growth of stalks will be produced, quite free from these depredators. The following facts incline me to believe that on a fertile soil, wheat may be thus mowed, with little if any eventual injury to the crop. Portions of a field of my own, the past season grew so rank, that deeming it would become lodged and mildewed, by way of experiment a space in it was mowed down after the plants were two feet in height, and another after the heads had begun to put forth. Though not so early in ripening, the appearance of these two patches at harvest, indicated, so far as a single experiment could do, that wheat might be mowed at the former period without any diminution of its productiveness, whilst at the latter, both the straw and heads would be of a more slender and feeble growth.

6. *Fly proof wheats.*—That there are any kinds of wheat which are perfectly "fly proof," (to use a common and expressive term,) as has been sometimes stated, we wholly disbelieve. At times when the fly is so excessively numerous as to attack barley and rye, it is not probable that any of the cultivated species of the genus *Triticum* can entirely withstand its attacks. But that there are kinds of this grain, that escape with little injury, when other kinds are almost wholly destroyed, is a well established fact. What the peculiar properties possessed by these varieties are, that render them thus singularly invulnerable, has never been investigated with that degree of accuracy, which so interesting and important a subject well merits. Mr. Worth supposes that fly proof wheats must have smooth leaves, affording no grooved or channelled surface to hold

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the eggs of the fly. (*Amer. Far*, ii. 181). Mr. Smeltzer thinks the leaves of such wheat stand out horizontally from the stem, or incline downwards, instead of being erect, and that the egg is thus washed to the ground by rains. (*Patent Off. Report*, 1844, p. 434). The Hon. J. Taliaferro regards the immunity as proceeding from the strength and vigor of the roots, whereby the plant continues to grow, notwithstanding the exhaustion of its juices by the worm. (*Patent Off. Report*, 1842, App. No. 1). This theory appears to us more plausible and more in accordance with the facts recorded with regard to these varieties, than any other which has been proposed. Other opinions less specific, might be alluded to, but all of them are opinions merely, as we discover no evidence of their having been substantiated by a diligent investigation of this point. The reputation of the UNDERHILL WHEAT has already been sufficiently shown. This was a bearded white chaff, with a plump yellow berry, requiring to be thoroughly dried before grinding, and then producing flour in quantity and quality equal to the best of the other varieties. Its fly proof quality was by many supposed to be owing to the hardness or solidity of its straw. The fly freely deposited its eggs upon this wheat, but it was seldom, if ever, materially injured by it. The SPELTER WHEAT (*Triticum spelta*, Linn.,) was also long since remarked as never having been injured by the fly. This is so very inferior a species, that it is but little in use in this country, and only cultivated because it will grow well on the poorest soils, whether the season be wet or dry, and is free from all maladies. It has a long, slender, beardless head, with the chaff so firmly attached to the grain, that it can only be separated by passing through a mill, and yields a yellowish flour. It is more highly esteemed in Germany than in any other country, being there preferred even to all other kinds of wheat. The CHINA WHEAT, said originally to have been found in a crate of imported China ware, branches and grows very much like rye, ripens at least a week earlier than other varieties, yields largely, (forty or fifty bushels per acre it is said,) and has never been known to be injured by the fly. (*Pat. Off. Report*, 1844, p. 43). The MEDITERRANEAN WHEAT, in such high repute for its fly proof and other qualities, was introduced into Maryland in 1837. It is a slight red chaff, having a long stiff beard, a long, red, and very flinty berry, and ripens about ten days earlier than

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other varieties. Mr. Garnett, in his Fredericksburg address, considers its only title to be designated as fly proof, is, that it recovers better than other wheats from the depredations of this insect. In the *South. Planter*, (vol. ii. p. 243,) it is said to be a coarse, dark grain, much like rye, and yielding such indifferent flour, that some of the merchants had announced they would buy no more of it. Its straw too, when grown upon a fertile soil is said to be too weak to support the head. Mr. R. L. Wright, in the *American Agriculturist* of 1843, and others, state that it improves by cultivation. As it becomes fully acclimated, it will, we doubt not, lose its most objectionable traits; but will it not with them also lose its fly proof and other qualities, which are its main recommendations at present? On the whole, this variety is so very prolific, and so exempt from all diseases, that we are not surprised at the marked favor it has received. It is admirably adapted for securing a premium in our agricultural societies, where, "the largest crop, raised at the least expense" receives the prize; but its grower will be reluctant to inform his neighbors, that he sells it in market at six cents per bushel under the current price. In fine, we think this noted variety can never come into general favor in those districts where choicer kinds can be successfully cultivated. The ETRURIAN WHEAT, brought home by Com. Stewart, so far as yet appears, possesses all the most valuable qualities, and none of the defects of the Mediterranean. This is a bald variety, having a strong and vigorous stalk, a beautiful long smooth head, yielding a round plump, white kernel, with a remarkably thin bran. It is very prolific, and quite as early as the Mediterranean, (Rev. D. Zollickoffer and others in the *American Farmer*,) and has thus far resisted the attack of the fly. We are gravely told by an anonymous writer, that "this wheat was not, as its name would indicate, brought from the little Island of Etruria." In what *creek* this "little island" is situated, we have been unable to discover, but with such a decided negation, we are driven to the inference that the grain in question was derived from a territory which we *moderns* call Tuscany. The WHITE FLINT WHEAT, one of the choicest varieties of western New-York, withstands the attack of the fly better than any of the other kinds there in use. For a full account of it, see Gen. Harmon's paper in the *Trans. N. Y. State Agric. Soc.*, 1843, p. 217. In conclusion of this branch of our

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subject, we would observe, that we should by no means be solicitous of procuring any variety of wheat, *merely* because of its fly proof qualities, believing as we do, that in all ordinary visitations of the fly, other measures are a sufficient safeguard. If vigor of root, firmness of stalk, and rapidity of growth, are, as would appear, the points which render these varieties fly proof, a fertile soil will certainly go far towards imparting to most other varieties the same quality.

7. *Steeps for the seed.*——These have been recommended with a two-fold view. 1st. To destroy the eggs; decoction of elder, juice of elder, boiling water, &c. These assume the erroneous position that the eggs of the fly are deposited upon the grain; it is manifest therefore that they can be of no utility. 2d. To insure a quick and vigorous growth of the young plant. Where sowing is deferred until late in the season, it may be judicious to resort to some measure of this kind to stimulate the seed to a more speedy and rapid germination and growth. In *Carey's Museum*, (vol. xii. page 182,) an experiment of a Poughkeepsie farmer is related, who had soaked his seed wheat in a solution of saltpetre, four ounces being dissolved in water sufficient to wet a bushel. After soaking twenty-four hours, it was spread out and dried twelve hours, and then sowed, so late as the first of November. Early in the following June, this crop is reported as being in advance of neighboring ones which had been sowed early. This experiment, and others of a similar character, strikingly indicate that it lies much within the compass of human instrumentality to accelerate the growth of vegetation, by measures of this kind.

8. *Oats as a decoy.*—It has been recommended, to furnish a crop of young or of "volunteer" oats to the insect, on which to deposit its eggs; and when it has nearly or quite completed this operation, plowing the oats under, thus burying the eggs and larvæ, and then sowing the wheat upon their graves. To us, this appears only as "a tub to amuse the whale;" or in other words, an admirable project for wheedling honest "Farmer John" into late sowing, upon an enriched well pulverized soil. We have no clear evidence that the fly will deposite its eggs upon oats. It certainly will not be inclined to do so if there is any young wheat, barley, or rye in the vicinity to which it can resort.

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9. *Wheat as a decoy.*—The preceding measure suggests to us another, which is well worthy of the attention of the agriculturist. The facts recorded respecting this insect, clearly show that it is the earliest sowed and most forward fields of grain that are most infested. The fly is attracted to these fields, and finding a more luxuriant vegetation, and a more shady covert here than elsewhere, and meeting with all the accommodations which it desires, it here remains, even though adjoining fields separated only by an open fence, have come forward sufficiently to afford at least a part of the brood, quarters equally as comfortable. To us it appears evident, from these premises, that if one or two acres across the middle of a large field be sowed with wheat about the middle of August, all the flies in the vicinity will be attracted to this point, and there retained; so that it will be perfectly safe to sow the remainder of the field by the middle of September. If the Hessian fly is common in the neighborhood, the early sowed strip will be badly infested. If so, let it be turned under by the plow, either after two or three severe frosts have rendered it certain that the season for depositing the eggs is fully past, or early in the following spring—resowing it with winter wheat in the former case, or with spring wheat in the latter. By this procedure all the larvæ will be buried and perish. Only in one contingency, as we can perceive, will this plan be inexpedient or liable to fail, namely, when the flies are present in such vast numbers, that the decoy thus prepared is inadequate fully to accommodate them. Upon this point, the amount of damage done at the preceding harvest, will enable the cultivator to judge with a considerable degree of certainty. The advantages which this plan promises, are, that it draws all the insects of the neighborhood together, and destroys their entire progeny; it enables most of the grain to be sowed as early as is desirable; and finally, there will no second or spring generation come forth in the field to attack any part of the crop. This measure therefore, should receive a fair trial from some intelligent wheat grower in a district suffering under this pest.

10. *Deeply covering the seed.*—From the letters of a King William County Farmer, and from the specimens furnished by him to Mr. Garnett, which are figured in the *American Farmer*, (vol. ii. p. 174,) the following facts would seem to be conclusively established,

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to wit :—That when a kernel of wheat is buried to the depth of about three inches, it sends a single stem upwards, which, within an inch of the surface forms a crown, sending from that point a tuft of fibrous roots downwards, and a tuft of blades upwards; these become the main roots and stalks, if undisturbed. But if these be destroyed by the fly, a new set of shoots and roots start directly from the deep buried kernel, and these latter shoots are never attacked by the fly. A kernel but slightly covered, on the other hand, sends up its blades at once directly from the seed; if these be attacked therefore, the whole is destroyed. Such is a brief but plain statement, we believe, of the argument of the King William Farmer. In other words, seed slightly covered can send up but a single set of shoots, and being attacked by the fly, the whole perishes; but seed deeply buried can send up a double set of shoots; those first appearing are attacked and destroyed; those which thereupon start directly from the seed are never infested by the fly. Admitting the facts to be as set forth, it amounts to this, that by deeply covering, the same quantity of seed in reality produces two crops; one, which is speedily harvested by the fly; and the other, gathered at a later day by human hands. To this procedure we have two objections. By adopting it, you do nothing whatever towards destroying the insect or frustrating it in the least in its operations. On the contrary, you aim to provide food for it. You cherish it. You, in effect, say to it, "be fruitful, multiply, and replenish the earth." True, by giving it what it wants, it leaves us as much more. But it is rather humiliating to us "lords of creation" to rear crops "at the halves" and place ourselves in the rank of mere tenants to so ignoble a landlord! Again, this measure only shields us against the autumnal attack. It does nothing against that of the following spring. Nay, by providing so well for the first generation, it tends to make the second generation more numerous, and the spring attack consequently more severe. Thus much upon the supposition that the facts are precisely as set forth by the King William Farmer. That he sincerely believed them to be correct, and that he was perfectly honest in the selection of the specimens which he forwarded to Mr. Garnett, we do not in the least doubt. Indeed the encomium which Mr. G. has written upon the character of his friend, must forever place him above all suspicions of insincerity or of anything approach-

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ing to chicanery. But our own observations impress upon us strongly the conviction that he is in error in one most important point in his argument, namely, that seed slightly covered, dies whenever its blades are destroyed by the fly. It is only in an impoverished soil that it thus dies; in a rich soil, as has been already stated, its vitality continues, its roots are so well surrounded with nutriment that they readily sustain it, and its first shoots being destroyed, it sends up a second set which grow unharmed. It thus performs the same operation which the King William Farmer contends, it can only do when deeply buried. Our specimen, from which the drawing (fig. A,) was taken, plainly shows this fact. The illustration is an exact copy from nature, of two shoots which were separated from a tuft of similar ones, all growing from one shallow covered seed; and in every infested field which we have examined, myriads of similar specimens might have been gathered, whilst commonly only on knolls and other barren or dry parts of the fields were the plants found to be wholly destroyed, as they are represented in the figures of the *American Farmer*. A fertile soil therefore insures the same results which are claimed for a deep covering of the seed. In both cases, the shoots which first appear are destroyed; another set appear afterwards, which are unharmed—not because the seed is buried too deep for the worms to crawl down to it, as the King William Farmer seems to infer, but because there are no flies any longer abroad to deposite their eggs upon the leaves. The exact truth then, with regard to this matter, we are firmly persuaded is as follows. In a meagre soil, the seed will die, whether it be covered slightly or deeply. In a less impoverished soil, *if the weather be dry* in September as it frequently is, seed near the surface will often perish, when that which is deeply buried will survive. In a fertile soil the seed will survive, whether it be covered shallow or deep. That suits of specimens can therefore be easily procured which will appear to demonstrate a state of things in every particular the very reverse of those figured in the *American Farmer*, scarcely admits of a doubt. Our conclusion then is, that the King William Farmer is measurably correct in his position, but by no means correct to the extent contended for. When the Hessian fly is present in any district, deeply covering the seed, especially if it be early sowed, will in most cases be an additional safeguard against

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its destruction. The measure is therefore good as a subordinate one, but it must fall far short of ranking as a primary one.

11. *Procuring seed from uninfested districts.*—This measure also, is based upon the erroneous supposition that the eggs are deposited upon the grain. It can consequently be of no utility whatever as a safeguard against the Hessian fly. The measure has been fairly tested in several instances without success.

12. *Sun-drying the seed.*—Mr. W. H. Hill, in the *Nashville Agriculturist* of 1842, states that for fifteen years his wheat crops had not been injured by the Hessian fly, whilst those of his neighbors had suffered more or less. This immunity he attributes to two causes; exposing his seed to the sun for two days previous to sowing it, and sowing none but the largest and fullest grains, the others being separated by a sieve. Doubtless stronger roots and a more vigorous growth is obtained by sowing large, plump seed. We think that effectually drying the seed in the sun can have but one effect, that of retarding its germination a short time—an end that may be equally as well attained, and with less trouble, by deferring the sowing until a somewhat later period.

13. *Drawing elder bushes over the young plants.*—We have here one of the fancies of a former day, it being supposed that elder possessed an odor or some more occult property, which rendered it peculiarly repulsive to insects. A trial of it against the Hessian fly, however, soon demonstrated that it possessed little or no virtue of that kind in reference to this insect. If any benefit ever resulted from it, it was probably only by dislodging and brushing off some of the eggs from the blades of the wheat.

14. *Sprinkling fine salt, ashes, or caustic lime over the young plants.*—The first of these measures was proposed, from its appearing at one time that wheat growing upon points of land exposed to the sea air was less injured than that growing back from the coast. Neither of these remedies, however, have been attended with success, in any case on record, and they probably are of no service whatever, except as they may slightly increase the fertility of some fields. There is no likelihood that the fly, its eggs, or larvæ can be materially discommoded by them.

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15. *Burning and plowing up the wheat stubble.*—This measure was originally proposed by Judge Havens, and has been unanimously approved of and strongly urged by several of the most intelligent writers since. Indeed, a slight examination can scarcely fail of impressing upon every one its utility, independent of the sanction of authority. Whoever will at, or soon after harvest, inspect the stubble of a field that has been badly infested by the Hessian fly, will find these insects in their flax seed state lying one, two, three or more, at the joints of perhaps half the straws of the field. What a trifling labor, or rather what a pastime will it now be to set fire to this dry stubble, and hereby inevitably consume countless thousands of these destroyers. This point appears so plainly evident, that no one, we think, will hesitate in pronouncing this remedy decidedly the most important and valuable of all. But a thought breaks in upon us, of such fearful import, that fancying we see the burning brand extended, in an instant more to send a sheet of vivid flame, leaping, hissing, and crackling over the fated field, we involuntarily shout,

"Stop! or thy tread is on an empire's dust!"

Of a truth, what a short sighted mortal is man, and how often are the words of the poet verified, that "a little knowledge is a dangerous thing." Seeing his enemy chained to the stake, he exultingly rushes at once to fire the faggots, and lo, a dozen of his friends are immolated upon the same pyre! Is it not a fact, that whilst by this measure we consume the Hessian fly by hundreds, we inevitably destroy its mortal foes by thousands? And that the very means which we thus resort to for averting a future calamity are the surest means that could be devised for bringing that calamity upon us! If nine-tenths of every generation of the Hessian fly are destroyed by three or four other insects, who can calculate the value of the services which these latter are yearly rendering us? And who, then, will be so inconsiderate and ruthless as to destroy *nine* of these useful parasites, in order to exterminate *one* Hessian fly! Yet this must, in most cases, be the result of burning the stubble of the wheat field. We commenced our account of this remedy impressed with a belief that it was the best that had ever been proposed; we close it, persuaded that it is the very worst.

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Brief Summary of the preceding History.

The Hessian fly (*Cecidomyia destructor* of Say,) is a European insect, and has been detected in Germany, France, Switzerland and Italy, where it at times commits severe depredations upon the wheat crops. Its ravages are alluded to so far back as the year 1732. It was brought to this country, probably in some straw used in package by the Hessian soldiers, who landed on Staten and the west end of Long Island, August, 1776, but did not become so multiplied as to severely injure the crops in that neighborhood, until 1779. From thence as a central point, it gradually extended over the country in all directions, advancing at the rate of from ten to twenty miles a year. Most of the wheat crops were wholly destroyed by it within a year or two of its first arrival at a given place, and its depredations commonly continued for several years, when they would nearly or quite cease; its parasitic insect enemies probable increasing to such an extent as to almost exterminate it. It is frequently reappearing in excessive numbers in one and another district of our country, and in addition to wheat, injures also barley and rye.

There are two generations of this insect annually. The eggs resemble minute reddish grains, and are laid in the creases of the upper surface of the leaf, when the wheat is but a few inches high, mostly in the month of September. These hatch in about a week, and the worm crawls down the sheath of the leaf to its base, just below the surface of the ground, where it remains, subsisting upon the juices of the plant, without wounding it, but causing it to turn yellow and die. It is a small white maggot, and attains its growth in about six weeks. It then changes to a flax seed like body, within which the worm becomes a pupa the following spring, and from this the fly is evolved in ten or twelve days. The fly closely resembles a musquitoe in its appearance, but is a third smaller, and has no bill for sucking blood; it is black, the joints of its body being slightly marked with reddish. It appears early in May, lays its eggs for another generation and soon perishes. The worms from these eggs nestle at the lower joints of the stalks, weakening them and causing them to bend and fall down from the weight of the head, so that towards harvest, an infested field looks as though cattle had passed through it.

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Wheat can scarcely be grown except upon a fertile soil in those districts where this insect is abundant. The sowing should be deferred until about the last of September, the season then being past, when the fly usually deposites its eggs. If at any time in autumn the eggs of the insect are observed to be profusely deposited upon the leaves, the crop should be speedily grazed down by sheep and other stock, or if this cannot be done, a heavy roller should be passed over it, that as many of the eggs as possible may be crushed or dislodged thereby. One or the other of the same measures should also be resorted to in the spring, if the same contingency occurs; or if the worms are at a later date discovered to be numerous at the first and second joints of the young stalks, the experiment may be tried of mowing as close down as possible, the most infested portion of the field. Where the soil is of but medium fertility, a resort to some of the hardier varieties of wheat, which are known to be in a measure fly proof, may be advisable.

Fitch's Point, Salem, N. Y., April, 1847.

Note.—Since our preceding essay, upon the *Cecidomyia tritici*, was published, having had an opportunity of perusing the original articles of Mr. Kirby upon that species, we find that he both figures and describes the joints of its antennæ as "medio constrictio." It is singular that this most important distinctive mark has been so misstated in the descriptions of that species which have been republished upon this side of the Atlantic, and also in Turton's edition of the *System of Nature*. From the remarks introductory to our "Description," some might perhaps infer that this error arose with the founder of the species. We hasten, therefore, to obviate any such impression.

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[illegible] the knowledge of the appearance of [illegible] means of preventing its depredations are concerned, although it is always interesting to [illegible].

[illegible] at the expense of the cultivated *Rubus* (raspberry), in the heart of which the pupa may be found in the month of May, the imago appearing in June. The larva [illegible] between the wood and the bark, injuring the plant, and causing a [illegible] unsightly excrescence. It next penetrates to the pith, which it traverses for two or three feet, finally excavating a cavity in which it undergoes its transformations.

It is probable that the larva feeds during summer and autumn, and passes the winter in the pupa state. The diseased stems are readily recognizable, and should be cut out and burnt in autumn, or early in the spring. The perfect insect is sometimes found upon the native *Rubus villosus*, which renders it probable that this genus of plants constitutes the natural food of the larva.

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THE AGRILUS RUFICOLLIS.

By Prof. S. S. Haldeman.

Plate, *Fig. I.*—This little insect, so hurtful to the raspberry, is about three inches long; black, minutely punctured, thorax and front brassy; front with a vertical impression; a wide shallow impression across the thorax posteriorly, and another at the base of the elytra. In this particular case, the knowledge of the appearance of the insect is not essential, as far as the means of preventing its depredations are concerned, although it is always interesting to know whence an injury proceeds.

In its larva state, Agrilus ruficollis lives at the expense of the cultivated *Rubus* (raspberry), in the heart of which the pupa may be found in the month of May, the imago appearing in June. The larva bores between the wood and the bark, injuring the plant, and causing a wide, unsightly excrescence. It next penetrates to the pith, which it traverses for two or three feet, finally excavating a cavity in which it undergoes its transformations.

It is probable that the larva feeds during summer and autumn, and passes the winter in the pupa state. The diseased stems are readily recognizable, and should be cut out and burnt in autumn, or early in the spring. The perfect insect is sometimes found upon the native *Rubus villosus*, which renders it probable that this genus of plants constitutes the natural food of the larva.

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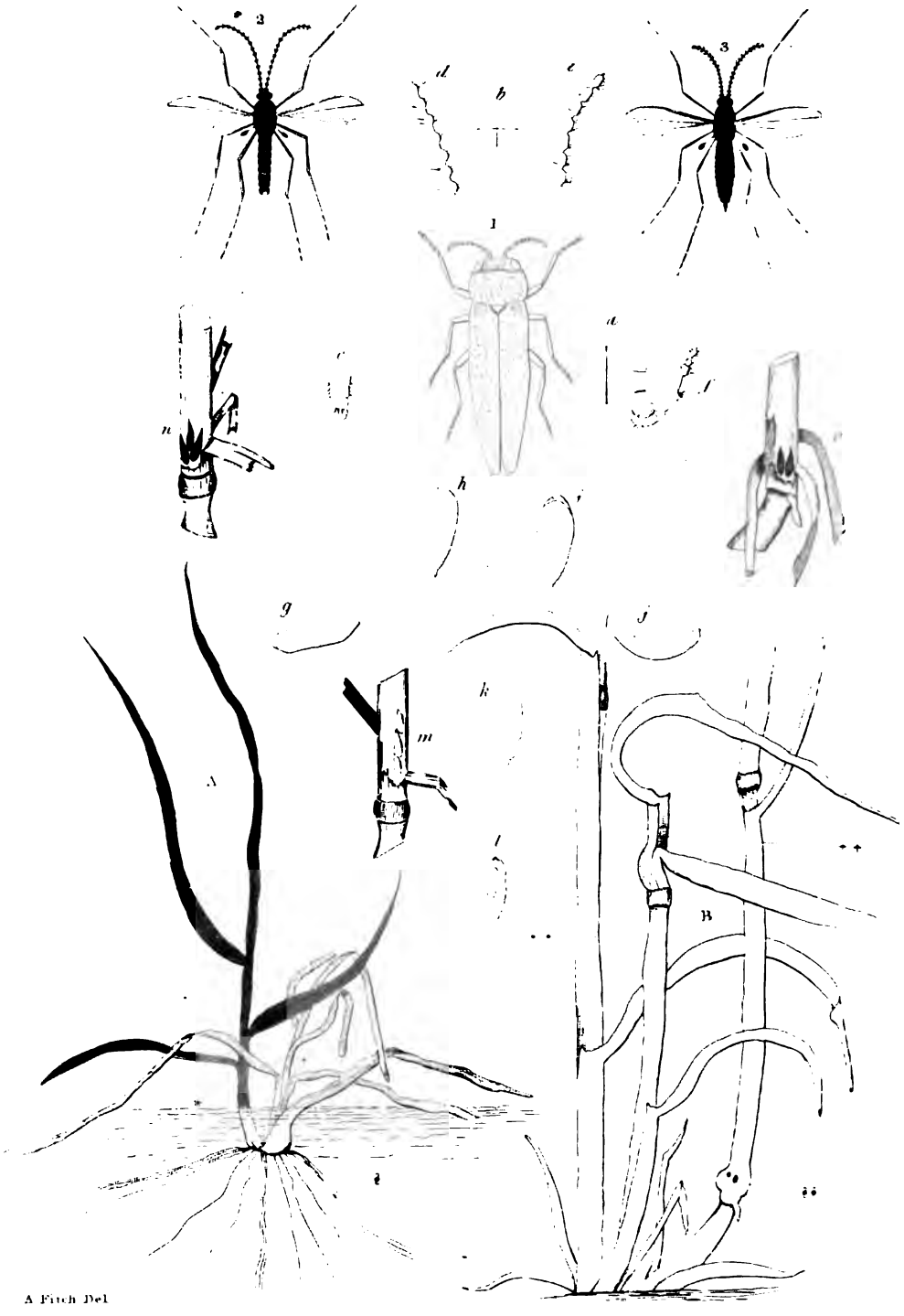

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Engraved by John Ebbutt, for the Quarterly Journal of Agriculture

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DESCRIPTION OF THE PLATE.

Fig. 1. *Agrilus ruficollis*, Fab. *a*. Its natural length.

Fig. 2. Hessian fly, male. (*Cecidomyia destructor*.) From a young specimen, having the fulvous sutures of the abdomen wide.

b. Its natural size.

c. Ventral view of the terminal segments of its abdomen.

d. Joints of its antenna.

Fig. 3. Hessian fly, female. (*C. destructor*, ♀.) From an older specimen, having the fulvous sutures narrow and in part obliterated.

e. Joints of its antenna.

f. Profile view of the head, palpi, and origin of the antenna.

g. Dorsal view of the worm or active larva.

h. do do "flax seed," or larva case.

i. Ventral view of the same.

j. Lateral view of the same.

k. Dorsal view of the dormant larva, taken from the larva case.

l. Ventral view of the pupa.

m. Wheat stalk; sheath broken away, showing the young worms on their way to the joint.

n. and *o*. Wheat stalks; sheath broken away, showing the "flax seeds" in their ordinary situation.

A. Appearance of a healthy (*), and of a diseased (†) shoot of wheat in autumn, the worms lying at §.

B. Appearance of a healthy (**), and two diseased stalks of wheat at harvest time. (††) Stalk broken, from being weakened by the worms. §§ Base of sheath swollen from worms having laid under it, and perforated by parasites coming from those worms.

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ON THE CHOICE OF TREES AND SHRUBS FOR CITIES AND RURAL TOWNS

By D. J. Browne.

It has often been remarked by strangers, that, in sailing up the harbor of New York, they have been strongly impressed with the beauty of the scenery, particularly with the number and diversified forms of the trees; and that, after landing, the whole appears like one vast garden, interspersed, not only with many trees indigenous to the neighboring woods, but with those of the most distant climes of the two worlds. In progressing inland, or in either direction along the sea-board, the same features are observable, though in a less degree, in all of our cities and larger towns. It has also been remarked, that the foreign trees most conspicuous in the artificial scenery, in America, are various kinds of fruit-trees, the Lombardy Poplar, the Weeping Willow, the Horse-Chesnut, the European Lime-tree, the Ailantus, and the Paper-Mulberry. The contrast between the regular position and round-tufted heads of the fruit-trees, and the erect-branched summits of the poplars, and between these trees and the drooping heads of the willow and the ailantus, as well as between those of the wild luxuriance of the indigenous species, strikes the beholder with admiration. This love, or desire, for rural taste and ornament, speaks well for our people, whether they have been the most judicious in their choice and management, or not; and doubtless, the time is not far distant, when a due regard will be paid to the cultivation of such trees and shrubs for beautifying our parks, public high-ways, and private grounds, as will best subserve the purposes of health, ornament and shade,—and with this view the following brief hints are offered, not by the way of complaint, but merely as suggestions for future improvement.

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During the early periods of the settlements of the North American colonies, the principal foreign trees that attracted the attention of cultivators, appear to have been those bearing our common edible fruits, the Box, the Yew, the Willow, the Horse-Chesnut, the Mountain-Ash, the European Linden, and occasionally an Elm, a Holly, or an Oak. Among our native species, scarcely any were regarded with interest, except the Balm of Gilead (*Populus candicans*), the Tulip-tree (white-wood), the Button-wood (sycamore), the Catalpa, the Sugar-Maple, the Locust, the Elm, and the Balsam Fir (balm of gilead).

Among the oldest and most noted collections in this country, may be mentioned the nursery of the elder Philipse, of Philipsburgh (now Yonkers), established about the middle of the seventeenth century, and the Bartram Botanic Garden, at Kingsessing, situated on the right bank of the Schuylkill, near Philadelphia. The latter establishment was founded, in 1720, by John Bartram, and continued by his son, and descendants, and is still known as the Bartram Garden.

Among the trees and shrubs, at present growing in the Bartram Botanic Garden, may be enumerated the following, most of which were planted by the founders :—Umbrella Magnolia (*Magnolia umbrella*), Large-leaved Magnolia (*Magnolia macrophylla*), Cucumber-tree (*Magnolia acuminata*), Long-leaved Cucumber-tree (*Magnolia auriculata*), Purple-flowered Magnolia (*Magnolia purpurea*), Tulip-tree (*Liriodendron tulipifera*), Papaw (*Asimina glabra*), European Linden (*Tilia europæa*), American Linden, or Bass-wood (*Tilia americana*), One-styled Stuartia (*Stuartia virginica*), Franklinia (*Gordonia pubescens*), Sugar-Maple (*Acer saccharinum*), Black Sugar-Maple (*Acer s. nigrum*), Sycamore-Maple (*Acer pseudoplantanus*), Red-flowered Maple (*Acer rubrum*), Silver-leaved Maple (*Acer eriocarpum*), Ash-leaved Negundo (*Negundo fraxinifolium*), European Horse-Chesnut (*Æsculus hippocastanum*), Large Buckeye (*Æsculus flava*), American Grape-vine (*Vitis labrusca*), Chinese Ailantus (*Ailantus glandulosa*), Prickley Christ's Thorn (*Paliurus aculeatus*) Stag-horn Sumach (*Rhus typhina*), Fringe-tree (*Rhus continus*), Yellow-wooded Virgilia (*Cladrastis tinctoria*), Common Locust-tree (*Robinia pseudacacia*), Rose-flowering Locust

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(*Robinia viscosa*), Honey-Locust, or Three-thorned Gleditschia (*Gleditschia triacanthos*), Kentucky Coffee-tree (*Gymnocladus canadensis*), Red-bud, or Canadian Judas-tree (*Cercis canadensis*), English Hawthorn (*Cratægus oxycantha*), June-Berry (*Amelanchier botryapium*), Mountain-Ash, or Fowler's Service-tree (*Pyrus aucuparia*), Witch-Hazel (*Hamamelis virginica*), European Dogwood (*Cornus mas*), Flowery Dogwood (*Cornus florida*), Sorrel-tree, or Tree-Lyonia (*Lyonia arborea*), American Rose Bay-tree (*Rhododendron maximum*), Broad-leaved Kalmia (*Kamia latifolia*), Carolinian Cyrilla (*Cyrilla caroliniana*), Snowdrop-tree, or Silver-bell Tree (*Halesia tetraptera*), Persimon-tree (*Diospyros viginiana*), Snow-flower Tree (*Chionanthus virginica*), European Ash (*Fraxinus excelsior*), White Ash (*Fraxinus americana*), Catalpa (*Catalpa syringæfolia*), Sassafras (*Laurus sassafras*), Leather-wood (*Dirca palustris*), Tupelo, or Gum-tree (*Nyssa biflora*), Silver-leaved Shepherdia, or Buffalo Berry-tree (*Shepherdia argentea*), Variegated Box-tree (*Buxus sempervirens variegata*), Black Mulberry tree (*Morus nigra*), White Mulberry (*Morus alba*), Red Mulberry (*Morus rubra*), Paper-Mulberry (*Broussonetia papyrifera*), Osage Orange (*Maclura aurantiaca*), European Elm (*Ulmus campestris*), American Elm (*Ulmus americana*), English Walnut (*Juglans regia*), Black Walnut (*Juglans nigra*), Butter-nut (*Juglans cinera*), Pecan-nut (*Carya olivæformis*), Shag-bark Hickory (*Carya alba*), Golden Willow (*Salix vitellina*), Weeping Willow (*Salix babylonica*), White Poplar, or Abele-tree (*Populus alba*), Lombardy Poplar (*Populus fastigiata*), Balm of Gilead (*Populus candicans*), European White Birch (*Betula alba*), Paper Birch (*Betula papyracea*), Black Birch (*Betula lenta*), Poplar-leaved Birch (*Betula populifolia*), English Oak (*Quercus robur pedunculata*), American White Oak (*Quercus alba*), Large-fruited Oak, or Bur-Oak (*Quercus macrocarpa*), Black Oak (*Quercus tinctoria*), Bartram Oak (*Quercus heterophylla*), Willow-leaved Oak (*Quercus phellos*), European Beech (*Fagus sylvatica*), Purple-leaved Beech (*Fagus s. purpurea*), American White Beech (*Fagus americana*), American Red Beech (*Fagus ferruginea*), Spanish Chesnut (*Castanea vesca*), American Chesnut (*Castanea v. americana*), Chinquapin, or Dwarf Chestnut (*Castanea pumila*), American Hornbeam (*Carpinus americana*), Iron-wood, or Hop-Hornbeam (*Ostrya virginica*), English

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Filbert (*Corylus avellana tubulosa*), American Plane-tree, or Button-wood (*Platanus occidentalis*), Sweet gum (*Liquidambar styraciflua*), Candleberry Myrtle (*Myrica cerifera*), Ginkgo-tree (*Salisburia adiantifolia*), American Red Pine, or Norway Pine (*Pinus resinosa*), White Pine (*Pinus strobus*), Norway Spruce (*Abies excelsa*), European Silver-Fir (*Picea pectinatus*), Balm of Gilead, or American Silver-Fir (*Picea balsamea*), European Larch (*Larix europæa pendula*), Chinese Arbor Vitæ (*Thuja orientalis*), American Arbor Vitæ (*Thuja occidentalis*), Bald, or Deciduous Cypress (*Taxodium distichum*), Red Cedar (*Juniperus virginiana*).

Towards the end of the last century, the cultivation of trees, in this country, was accelerated in a great degree by the establishment of tree-nurseries. At the close of the war of independence, William Hamilton, Esq., of the Woodlands, near Philadelphia, visited various parts of Europe, and on his return in 1784, formed the most complete garden in the United States. It is said, that his collection contained, not only all the plants of America, but those of Europe and other parts of the world, which were considered of interest, either in medicine, or the arts. To this patriotic and liberal-minded citizen, we are indebted for the first introduction of the Ailantus, the Lombardy Poplar, the Weeping Birch, the Zelkoua (Planera,) the European Dog-wood, the Ginkgo-tree, and the Purple-leaved Beech. Some time previous to the Revolution, however, the father of the late William Prince, Esq., of Flushing, established the Linnæan Botanic Garden at that place; and it will be seen by referring to his printed catalogue of the year 1793, that his collection contained the following named trees:—"Fringe-tree, or Venetian Sumach, Snowdrop-tree, Pride of China, Lombardy Poplar, Linden, or Lime-tree, Weeping Willow, Aspen-tree, Sweet Almond, Hard-shelled Almond, Bastard Tamarind-tree, Blue Lilac, White Lilac, Syringas, Balsam Peru, Yellow Willow, Madeira-nut, Long Black Walnuts, Round Black Walnuts, Filbuds, White Althea frutex, Purple Althea, Double Tube-rose, White Mulberry, English Black Mulberry."

Among the other most distinguished cultivators or promoters of this branch of rural improvement, who lived or flourished in the latter half of the eighteenth century, may be mentioned the vener-

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able Dr. Holyoke, Timothy Pickering, Charles Bulfinch, Governor Gore, Judge Davis, General Dearborn, Judge Lowell, Dr. Thatcher, President Quincy, John Welles, and E. Hersey Derby, of Massachusetts; Dr. Aspinwall, Rev. Dr. Stiles, President Dwight, and Noah Webster, of Connecticut; Dr. Mitchell, Simeon DeWitt, Dr. Hosack, Robert R. Livingston, P. J. Livingston, Stephen Van Rensselaer, De-Witt Clinton, Jonathan N. Havens, and David Thomas, of New-York; Joseph Cooper and William Coxe of New-Jersey; Dr. Franklin, Judge Peters, and Drs. Muhlenberg and Mease, of Pennsylvania; General Washington and President Jefferson, of Virginia; Stephen Elliott, General Pinckney, and F. A. Michaux, of South Carolina; and Messrs. Oember, Abbot, and Spalding, of Georgia. To give simply a list of the names only, of the amateurs, nurserymen, commercial gardeners, &c., who have contributed to the advancement of arboriculture in this country, within the last fifty years, would swell the subject beyond the limited length of this paper. Therefore, I will pass to the immediate object before us.

In ornamenting cities, villages, or rural towns, as well as public high-ways, farms, private grounds, &c., it is a great desideratum to find a class of trees and shrubs that will rapidly attain the desired form and size, afford a healthful and agreeable shade, and are free from the attacks of insects or from accidents of any kind, and at the same time will tend to beautify the scenery, and ultimately prove useful for fuel or construction in the arts. With the great variety of species and varieties before us, whether in a wild state or under cultivation, one might be led to suppose it an easy matter to select from among them, all that could be desired; yet, when we take all their points or qualities into account, how few there are free from objection. One class seemingly answer the desired end for the first ten or fifteen years, and then, by exuberance of growth, become too much expanded for the situations they occupy, and unless their beauty is destroyed by pruning, they grow top-heavy, and are finally uprooted or shattered by the winds; other kinds appear to flourish with vigor during the first few years, assuming a variety of graceful and picturesque forms, and then are checked in their growth, become sickly, or stag-headed, and unsightly to the eye; while a third class, although they may possess satisfactory qualities

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in most other respects, are attacked by noxious and disgusting insects during certain seasons of the year, and are often greatly injured thereby, if not totally destroyed. Hence the difficulties our early tree-planters labored under, who groped along in the dark, in many respects, and we need not be surprised, nor should we attach any blame to their praise-worthy efforts, even if they have not been the most choice in their selections, and the most judicious in their management.

Tree-culture, like music, architecture, dress, &c., has its *style* and consequently its rise and decline, according to the age and country in which it may prevail. For instance, the box-tree was much employed in verdant sculpture and close-clipped hedges, in the gardens of Roman villas in the Augustan age. Pliny describes his "Tusculian villa," as having a lawn adorned with figures of animals cut out in box-trees, answering alternately to one another. This lawn was again surrounded by a walk enclosed with evergreen shrubs, sheared into a variety of forms. Beyond this was a place for exercise, of a circular form, ornamented in the middle with box-trees, sheared as above, into numerous devices; and the whole was surrounded by a sloping bank, covered with box, and rising in steps to the top. In another part of the grounds of the same villa, the box is mentioned as having been cut into a variety of shapes and letters; some expressing the name of the master, and others that of the artificer. The same practice is still followed in several Roman gardens. In that of the Vatican, for instance, a few years since, the name of the Pope, the date of his election, &c., might be read from the windows of the palace, in letters of box.

About the middle of the seventeenth century, the taste for verdant sculpture was at its height in England; and about a hundred years since it afforded a subject of raillery for the wits of the day, and soon afterwards began to decline. The following lines by West, convey a good idea of a topiary garden:—

"There likewise mote be seen on every side
The shapely box, of all its branching pride
Ungently shorne, and, with preposterous skill,
To various beasts, and birds of sundry quill,
Transform'd and human shapes of monstrous size.
• • • •

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Also other wonders of the sportive shears,
Fair Nature mis-adorning, there were found;
Globes, spiral columns, pyramids, and piers
With spouting urns and budding statues crown'd;
And horizontal dials on the ground,
In living box, by cunning artists traced;
And galleys trim, on no long voyages bound,
But by their roots there ever anchor'd fast."

The subject has been more or less revived within the last forty years, and fine specimens of architectural gardening may be seen at Whim, near Edinburgh, and in some of the public grounds in the vicinity of Amsterdam, and of Paris, where there are numerous colonades, arcades, walls, pyramids, and other architectural masses which produce an imposing effect.*

Soon after the introduction of the Lombardy poplar, by Hamilton, in 1784, it uninterruptedly spread throughout the country, and by the end of the second decade of the present century (1819), it had multiplied to such an extent that, stiff, formal rows of it were to be seen growing in front of dwellings and along the borders of fields and road-sides in almost every civilized town in the Union. But owing to the monotony and whimsical effect it usually produced in the scenery, and to its long creeping roots, which insinuated themselves below the surface of the ground, often to the distance of twice the height of its summit, forcing asunder pavements and cellar-walls, and robbing the neighboring vegetation of its legitimate food, this tree, for general purposes of ornament, was very justly condemned. Since the last-named period, however, from the universal prejudice against its culture, the opposite extreme has prevailed, and it is feared, that, ten years hence, scarcely an individual will be left in the country. This is to be regretted, as this poplar has a character peculiar to itself, and in certain situations it will produce an effect in the landscape that cannot be imitated by any other tree, except the cypress, or perhaps, in some cases, by the spruce-fir. For instance, when employed for contrasting with masses of round-headed trees, the Lombardy poplar has a most pleasing effect. Let us take a belt, or thicket of trees, as denoted by Fig. 1.

*Vide. Trees of America, pp. 46 and 433; also Loudon's Arboretum Britannicum, pp. 370, 1334, et 2306.

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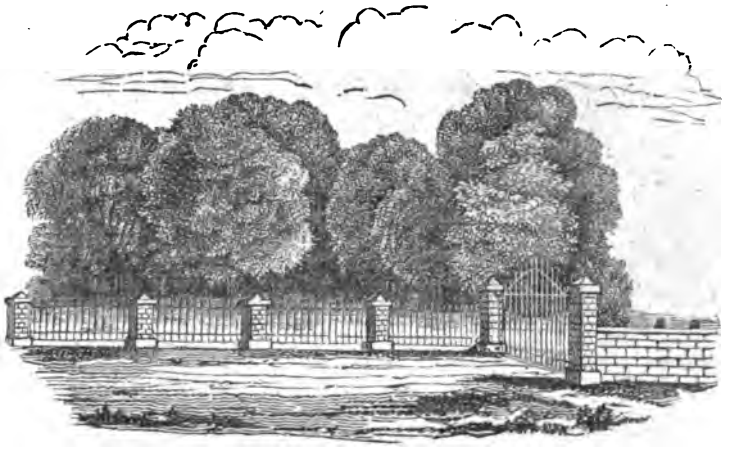

(Fig. 1.)

and when contemplated by themselves, they are quite fatiguing to the eye from their dull and monotonous appearance, although they might be displayed with advantage in the fore-ground of a lofty tower, or the tall spire of a church, and perhaps many other objects; but add the poplars, as shown in Fig. 2, and immediately an interest is created, and a character given to the group, it did not before possess. For the poplars, which are taller than the other trees, are so disposed as to break the mass into several groups, and give a new aspect to the whole scene. The pointed heads of the poplars also form a pleasing contrast with the round heads of other trees, and break the too uniform line depicted on the sky, while the branches, which rise stiffly upwards, contrast with, and render more graceful, the horizontal, or pendent masses of round-headed trees.

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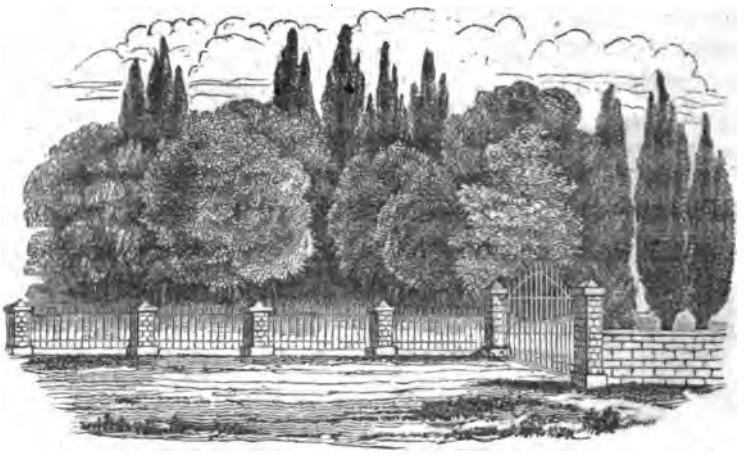

(Fig. 2.)

It is an established rule in the composition of landscapes, that all horizontal lines should be balanced and supported by perpendicular ones; and it is allowed by all writers on the material sublime, that gradually-tapering objects, of great height, create emotions of sublimity. Hence the Lombardy poplar, the cypress, and other fastigiate-branched trees may be advantageously planted wherever there is a continuance of horizontal lines; but they should be so arranged as to form a part of those lines, and appear to grow out of them, rather than to break or oppose them in too abrupt a manner. In the case of a bridge, displaying a long and conspicuous horizontal line, the effect is greatly increased by planting poplars on each side of it, as denoted in Fig. 3. Not only the lines of the bridge are balanced and supported by the upright poplars, but lengthened and pleasing reflections from the water are produced; which, breaking the horizontal gleams of light, not only afford variety and richness, but, by increasing the length of the perpendicular lines, formed by the trees, confer a degree of sublimity on the picture attainable by no other means.* Similar effects may be produced by planting this poplar near the margins of lakes or streams, or beyond the horizontal lines in fortifications, an admirable illustration of which is displayed on Governor's Island, in the harbor of New York.

* Vide Gardener's Magazine, i. p. 19.

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(Fig. 3.)

Another beauty the Lombardy poplar possesses, which is almost peculiar to itself, is, the waving line it forms when agitated by the wind. Most other trees, in this respect, are only partially moved at the same time, one side being at rest, while the other is in motion. But this tree, as Gilpin expresses it, "waves in one single sweep from the top to the bottom, like an ostrich-feather on a lady's head."

Notwithstanding the suitableness of the Lombardy poplar for planting in cities and towns, on account of its narrow form and vertical direction, or for planting behind a stable or other agricultural building, where the principal mass extends in length, rather than in height, the reasons already named concerning its creeping roots, should forever preclude its adoption near human habitations, or in cultivated fields; and the homely assertion of the late William Cobbett, in regard to this tree, conveys more truth than fiction, when he said, "That well-known, great, stong, ugly thing, called the Lombardy poplar, is very apt to furnish its neighbors with a surplus population of caterpillars, and other abominable insects."

The Lombardy poplar, when old, frequently decays at the extremity of its branches, which gives the tree an unsightly appearance. This may be remedied, however, by heading down the trunk, early

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in the spring, to the lowermost limbs, and in the course of the season, new shoots will spring forth, and in two or three years it will assume the character of a young tree.

The next foreign tree, after the poplar, which attracted attention, and became a universal favorite in this country, was the *Weeping Willow*, although it had been much earlier introduced. From its long, slender, and pensile branches; its very early, light, elegant and persistent foliage; and the facility with which it can be propagated, without knowing its incapacity to take permanent root in a moderately dry soil, it is not surprising that this tree should generally have been adopted, and in many cases misapplied. Hence the inconsistency of planting it in Brooklyn and New York, for ornamenting the streets and public grounds, the error of which is yearly manifest by the number of trees uprooted by the winds.

In ornamenting plantations, the weeping willow has the most harmonious effect where introduced among trees of shapes as unusual as its own; partly those of a similar character, as the silver-leaved maple, or the weeping birch, and partly those of contrasted forms, as the Lombardy poplar. The effect of all these trees is always good, when accompanied by water, as shown in Fig. 3; but when large, in a scene in which there are no other trees at all harmonizing with it, by their form, however beautiful it may be in itself, it always more or less injures the landscape.* Gilpin, in his "Forest Scenery," remarks that the "weeping willow is a very picturesque tree, and a perfect contrast to the Lombardy poplar." The light, airy spray of the latter, he adds, "rises perpendicularly; that of the weeping willow is pendent. The shape of its leaf is conformable to the pensile character of the tree; and its spray, which is lighter than that of the poplar, is more easily put in motion by a breath of air. The weeping willow, however, is not adapted to sublime objects. We wish it not to screen the broken buttresses and Gothic windows of an abbey, or to overshadow the battlements of a ruined castle. These offices it resigns to the oak, where dignity can support them. The weeping willow seeks an humbler

* Loudon, Arboretum Britannicum, pp. 1511 et 1512.

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scene; some romantic foot-path, which it half conceals, or some glassy pond, over which it hangs its streaming foliage,—

— 'and dips
Its pendent boughs, stooping, as if to drink.'"

This tree is not calculated for what is termed "rural or woodland scenery;" its softness of tint and peculiarly graceful habit, seem to render it a proper object for embellished landscapes. It is an excellent tree to plant by the side of fish-ponds, as it is generally found to lean over the water, and by this means affords shade to the fishes, which are frequently killed, in hot summers, by the rays of the sun, where there is no shade on the water; and the smaller the pool, the greater is the necessity to give it shade.

The *Mountain Ash* has also long been a favorite in the cities and larger towns in the Middle and Northern States, and as an ornamental tree is well adapted for small gardens, or any place where the harboring of singing birds is desired. "In the Scottish Highlands," observes Gilpin, "it becomes a considerable tree. There, on some rocky mountains, covered with dark pines and waving birch, which cast a solemn gloom over the lake below, a few mountain ashes, joining in a clump, and mixing with them, have a fine effect. In summer, the light-green tint of their foilage, and, in autumn, the glowing berries which hang clustering upon them, contrast beautifully with the deeper green of the pines; and, if they are happily blended, and not in too large a proportion, they add some of the most picturesque furniture with which the sides of those rugged mountains are invested." One great advantage of the mountain ash, in all situations, is, that it never requires pruning, and never grows out of shape. But unfortunately for this tree, as also is the case with its American congener (*Pyrus aucuparia americana*,) its trunks and roots are perforated by several species of borers, in consequence of which, it seldom arrives at an age of fifty or sixty years.

The *Evergreen Box* has been planted in this country from the earlier periods of settlement, and, in modern gardening, forms a most valuable shrub, or low tree. It is more particularly eligible as an undergrowth in ornamental plantations; where, partially sha-

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ded by other trees, its leaves assume a deeper green, and shine more conspicuously. Next to the holly, it has the most beautiful appearance in winter, more especially when the ground is covered with snow. The variegated sorts are admissible as objects of curiosity; but, as they are apt to lose their variegation when planted in the shade, and as in the full light, their green is frequently of a sickly yellowish hue, they certainly cannot be recommended as ornamental.

The *European*, or *Field Elm*, has sparingly been planted in the Northern and Middle States, and forms, in many respects, a desirable tree in parks and lawns; but for the purposes of shading avenues and public highways, it is far inferior to our native elm, and numerous species of other indigenous trees. What is here said of the field-elm, may be applied to the European Ash, and the English Oak.

The *Weeping Birch*, or *Lady-Birch*, as it is sometimes called (*Betula alba pendula*,) is occasionally met with in collections in this country, and forms an elegant pensile tree, resembling the weeping willow, and is put in motion by the slightest breeze. When agitated, it is well adapted to characterize a storm; or in the landscape, it is calculated to occupy any station the weeping willow is expected to fill.

The *European Holly* has been sparingly planted in several of the older States of the Union, but from its tender nature, it has rarely succeeded north of the Potomac. In viewing it as a hedge-plant, or as an ornamental tree, or shrub, it is not surpassed by any other evergreen, and therefore should be cultivated in every latitude in which it will thrive. In the more Northern and Eastern States, however, the American Holly (*Ilex opaca*), may fill its place, if proper care be observed in transplanting it from the nursery, or the woods. A large mass of earth should remain attached to the roots when removed, and the tree should be set in the ground with the same side towards the south as it presented in that direction in its original site.

The *Zelkoua*, or *Tselkwa*, in a few instances, is to be met with in this country, and as a tall, fastigiate-growing tree, in some situa-

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tions, it may occupy the place of the Lombardy poplar, should a prejudice exist against the last-named tree. The zelkoua is distinguished by its shining-green, broadly-crenulated leaves, its smooth, greenish trunk, and somewhat resembles the beech, except that its branches are more numerous, and grow more erect. Its wood is said to be stronger and more durable than that of the oak.

The *Ginkgo-tree* is frequently to be met with in American nurseries and collections, and as a tall, somewhat spiry-topped tree, forms an appropriate subject for planting in clumps on a lawn, or in belts of wood surrounding fields.

The other foreign trees, which have more recently attracted general notice in this country, are the Horse-Chesnut, the Abele, the European Linden, the Paper-Mulberry, and the Ailantus. All of these species appear to have been unnecessarily and prodigally applied, unless we except the two latter for ornamenting the streets of densly-crowded cities and populous towns; and it is hoped that an improved taste, as well as the good sense of our citizens, will cause them to be more sparingly planted, and a judicious selection of our native trees, cultivated in their stead. Each of the first three, has an appropriate place in the landscape; but as subjects for shading streets or high-ways, they are particularly objectionable on account of harboring noxious and disgusting insects, and in affording them food.

The *Ailantus*, from the rapidity of its growth, regular form, and large, pendulous, palm-like leaves, so strong and bitter as to repel all insect attacks, may justly be entitled the "Metropolitan Tree." It is not free from objection, however, (and where is there a tree that is?) for, during the period of its flowering, the air is filled with the offensive odor of its pollen, at a distance of a quarter of a mile; and when raised from cuttings, the roots are liable to throw up troublesome suckers; in winter the budless branches present a clumsy appearance; and the tree, like most others of rapid growth, is comparatively short-lived. When planted in cities for shading streets, it may be removed every twelve or fifteen years, to give place for others of younger growth; but if employed for ornamenting broad avenues, or extensive parks, it may remain undisturbed for forty or fifty years; and when associated with the sugar-maple, the lirioden-

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dron, the horse-chesnut, or other trees of opposite characters, it produces an admirable effect. The ailantus, however, bids fair to be supplanted, in a degree, by its eastern rival, (*Paulownia imperialis*), which has recently appeared among us from China or Japan.

The *Paper-Mulberry*, from its easy propagation, rapidity of growth, and its singularly beautiful, light, open foliage, which is attacked by no insect, in most respects, is a very desirable object for shading avenues and streets; but, like the willow, when planted in a dry soil, it becomes top-heavy, and is often blown down or shattered by the winds; besides, it is one of the last trees to put on its leaves, and is too tender to withstand the climate of the northern parts of this State.

I now proceed to give a general notice of the native trees, that have been most planted in this country for the purposes of ornamen and shade, and of the manner in which they have often been treated; also, to point out such others as appears to be best adapted to the objects in view.

Among the earliest trees, cultivated by our forefathers, as before remarked, the *American Elm* stands conspicuous, and has long been a great favorite, particularly in New England, where it is very generally employed as a shade-tree for lining avenues, highways, the planting of parks, &c., and as such, there are few, if any, more appropriate for these objects. And, as a picturesque tree in woodland scenes, it is rarely surpassed by any of its forest brethren, in point of beauty or in size. When standing in a wood, in a soil it loves, it naturally grows upright, and rises higher than a generality of other trees; and, when standing insulated and alone, in a newly-cleared field, with its top decayed and dead, save here and there a small tuft of leaves, stretching forth its naked and withered arms, it forms a striking emblem of the aged patriarch, who has outlived all his fellows, and is a stranger in the land which gave him birth, in whom death is already struggling with life, and will soon gain the ascendency. But when cultivated or grown in a pasture or in the lawn standing in lonely majesty, towering to the heigth of a hundred feet, with its lowermost limbs diverging outward and upwards, at a few yards above the ground, and afterwards dividing, and sub-

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dividing into numerous smaller ramifications, and diffusing on all sides its pendulous branchlets, floating lightly in the air, it forms an object of dignity and grandeur. This tree, too, is among the first to salute the early spring with its light and cheerful green, which, though discordant at first with the gloomy hue of the pines and firs, partakes of a darker tint, as the season advances, and unites in harmony with their unchanged boughs. In autumn, also, before the nightly frosts and chilly winds have done their work, the bright golden foliage of the elm kindly mixes with the various hues of the poplar and the maples, which display all shades of red, from the deepest crimson to the brightest orange; a tint that contrasts agreeably at this season, with the pale-yellow, sober foliage of the birch and the beech, with the different shades of brown in the bass-wood and the ash, or with the buff-yellow of the larch. The beech, the ash, and the larch, however, do not, in general, take much part in this gorgeous pageant. The ash is chiefly leafless at this time, and its glory has passed away before the other two have scarcely begun to fade. Indeed, "the glossy green of the beech is perhaps more effective than if it partook of the general change; and even the gloomy blackness of the resiniferous trees, by relieving and throwing forward the gayer tints, is not without effect." But, unfortunately the foliage of this noble tree serves as food for several kinds of insects, or their larvæ, while its bark and wood are pierced by others for the purpose of making provision for their young. It is subject to but few diseases, however, and is not liable to any serious accidents, except in being occasionally struck by lightning, or prostrated by violent winds.*

Next to the elm, the *Sugar-Maple* is accounted as the finest among our shade-trees; and, in good taste, has long been planted along streets and avenues, in pastures, and ornamental grounds, fine illustrations of which are manifest, in the town of Stockbridge, Massachusetts, and in the beautiful village of Homer, in this State. This most noble and majestic tree, when growing in open situations, with ample room to spread on every side, where all the branches are exposed to the free action of light, is an object of great beauty. And it is no less beautiful in our forest, or woodland scenes, in au-

* Vide Trees of America, pp. 510 et 512.

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tumn when it puts on its bright-orange and deep-crimson robes. At first the extremities of the boughs alone change their color, leaving the internal and more sheltered parts still in their verdure, "which gives to the tree the effect of great depth of shade, and displays advantageously the light, lively coloring of the sprays." Later in the season, on the contrary, when the tints become more and more gorgeous, and the full beams of the sun-shine fall upon the large masses of foliage, the warm and glowing colors of the whole summit possess a great deal of grandeur, and add much to the beauty and effect in the landscape. From the graceful and regular form of its summit, the rich verdure, and cleanliness of its foliage in summer, as well as in spring, the planting of this tree cannot be too highly recommended either for country or town.

The *Button-wood* (sycamore), from its wide geographical range, its rapidity of growth, and the facility with which it can be propagated, has been more universally planted, as a shade-tree, in the United States, than any other species. Gilpin, in speaking of this tree says—"The Occidental plane has a very picturesque stem. It is smooth and of a light ash-color, and has the property of throwing off its bark in scales; thus naturally cleansing itself, at least its larger boughs, from moss and other parasitical encumberances. This would be no recommendation of it in a picturesque light, if the removal of these encumbrances did not substitute a great beauty in their room. These scales are very irregular, falling off sometimes in one part, and sometimes in another; and, as the under bark is, immediately after its excoriation, of a lighter hue than the upper, it offers to the pencil those smart touches, which has so much effect in painting. These flakes, however, would be more beautiful if they fell off in circular form, instead of a perpendicular one—they would correspond and unite better with the circular form of the bole. No tree forms a more pleasing shade than the Occidental plane. It is full-leaved; and its leaf is large, smooth, of fine texture, and seldom injured by insects."* If to these considerations we add the lofty height this tree attains, and the open character of its foliage, which admits the free passage of light and air, it is obvious that the button-wood, when associated with the willow, the ailantus, the sil-

* Forest Scenery, i, p. 53.

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ver-leaved maple, or the elm, is an appropriate subject for lining avenues and public highways. Unfortunate for this tree however, it has been severly affected with a malady, for the last five years, from Maine to Virginia, which seems to have baffled all skill in attempting to investigate its cause, and which, at one time, seemed to threaten the total extinction of the race. The past year, however, the evil was less formidable, the branches put forth with more vigor, and it is generally believed that the malady is passing away.

The *Tulip-tree*, (white-wood) like the occidental plane, occupies an extensive range, and has been successfully cultivated throughout the Atlantic States, for the purposes of ornament, from Newburyport, in Massachusetts, to St. Mary's, in Georgia, and west of the mountains beyond the Mississippi. When planted in a soil it loves, and where it has room to expand on all sides, next to the button-wood, it attains the amplest dimensions; while the perfect straightness and uniform diameter of the trunk, the more regular distribution of its branches, and the greater richness of its foliage and flowers, which are rarely attacked by any insect, give it a decided superiority over that tree. When grouped or associated with the willow, the ailantus, the silver-leaved maple, or the elm, the tulip-tree forms a most desirable acquisiton to parks and avenues, as well as to public highways. This tree, however, has but few fibrous roots, and consequently is somewhat difficult to be transplanted, unless a ball of earth is suffered to adhere to the roots, when removed.

Of all American trees that have been cultivated, either at home or abroad, there is no one, of which so much has been said, as the *Common Locust*. In the year 1823, an extraordinary excitement was produced in England concerning this tree, by William Cobbett, who resided in America from 1817 to 1819, and chiefly occupied himself in farming and gardening, on Long Island, near New York; and during that period, as he tells us in his "Woodlands," published in 1825 to 1828, that he was convinced that nothing in the timber way could be of so great a benefit as the general cultivation of this tree." "Thus thinking," continues he, "I brought home a parcel of the seeds with me in 1819, but I had no means of sowing it till 1823. I then began sowing it, but upon a very small scale. I sold the plants; and since that time I have sold

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altogether, more than a million of them!" Elsewhere, in the same work, he more especially directed attention to this subject, urging, in his clear and forcible manner, the immense importance of this tree in ship-building; and he was the means of thousands of it being planted in various parts of Britain. The name of *locust*, as applied to this tree, before Cobbett's time, was but little known in England, and many persons in consequence, thought it was a new tree. Cobbett had a large kitchen-garden behind his house at Kensington, which he converted into a nursery; and he also grew trees extensively on his farm at Barnes, in Surrey. Although hundreds of the Robinia psuedacacia stood unasked for in the British nurseries, the "locust plants," which every one believed could only be had genuine from Mr. Cobbett, could not be grown by him in sufficient quantities to supply the demand. He imported the seeds in tons; but when he fell short of the real American ones, he procured others, as well as young plants, from the London nurseries, and passed them off as his own raising or importation. Had the people of England known that locust seeds and locust plants were so easily to be obtained, it is probable that the locust mania would never have attained the height it did. To show the folly, or the knavery of this extraordinary individual, I will quote the following from Loudon's "Arboretum Britannicum," which should be preserved more as a literary curiosity rather than a historical record. "It is worthy of notice," says Loudon, "that Cobbett, apparently without ever having seen a hop-pole made of locust, boldly affirms that the tree is admirably adapted for that purpose; that trees from his nursery, after being four years planted on Lord Radnor's estate, at Coleshill, were 'fit for hop-poles, that will last in that capacity for twenty or thirty years at least,' that 'such poles are worth a shilling each (that is, nearly double what was at that time the price of good ash hop-poles); that 'five acres would thus, in five years, produce £529;' and that 'each stump, left after the pole was cut down, would send up two or three poles for the next crop, which, being cut down in their turn, at the end of another five years, would, of course, produce two or three times the above sum!' that locust wood is 'absolutely indestructible by the powers of earth, air, and water;' and that 'no man in America will pretend to say that he ever saw a bit of it in a decayed state.' After this, it will not

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be wondered at, that Cobbett should call the locust 'the tree of trees,' and that he should eulogize it in the following passage, which is so characteristic of the man, and so well exemplifies the kind of quackery in which he dealt, that we quote it entire:—'The time will come,' he observes, 'and it will not be very distant, when the locust-tree will be more common in England than the oak; when a man would be thought mad if he used any thing but locust in the making of sills, posts, gates, joists, feet for rick-stands, stocks and axle-trees for wheels, hop-poles, pales, or for anything where there is liability to rot. This time will not be distant, seeing that the locust grows so fast. The next race of children but one, that is to say, those who will be born sixty years hence, will think that the locust-trees have always been the most numerous trees in England; and some curious writer of a century or two hence, will tell his readers that, wonderful as it may seem, 'the locust was introduced to a knowledge of it by William Cobbett.' What he will say of me besides, I do not know; but I know that he will say this of me. I enter upon this account, therefore, knowing that I am writing for centuries and centuries to come.' "*

n America, the locust has been planted for ornament, in great abundance about farm-houses, and along fences and avenues, for more than fifty years; and since the forests were in a measure destroyed by the axe or fire, by the European settlers, along the seaboard and navigable waters inland, many persons in the Middle and Eastern States have cultivated this tree with a view to profit, and have not only supplied timber and trenails to the shipwrights of the cities or commercial towns, but have exported large quantities to England and elsewhere. These plantations seldom exceed an area of thirty acres, notwithstanding the agricultural societies of several States have offered premiums for their encouragement. Though the Robinia had never been known to be injured by any insect, towards the end of the last century, in Massachusetts, it was generally attacked by the larvæ of the *Cossus robiniæ*, which gradually extended their ravages to the southernmost points where this tree has been propagated. In consequence of this discouragement, the locust has been but little cultivated for the last twenty years in any

*Arboretum Britannicum, pp. 621 et 622.

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part of the United States, or in Canada, except for the purposes of ornament, or shade. In a communication received by me from Mr. Stephen H. Smith, of Smithfield, in Rhode-Island, dated on the 22d of November, 1844, he states that, in the winter of 1817, he cut from a lot a heavy growth of timber, principally chesnut. The soil on which it grew, is a rich loam, or a slightly tenacious subsoil. In the following spring, he set out in the same ground, at equal distance about one hundred good-sized, yellow-locust-trees to the acre. They kept pace with the natural growth of the forest that sprang up about them. In 1837, twenty years after, all the wood was again cut off the same lot, producing twenty cords to the acre, the locusts measuring at the stump from nine to twelve inches in diameter, each tree making three posts, seven feet long. The sprouts and offsets now occupy one half the ground, to the exclusion of a portion of the native timber. The borers have not assailed these trees at any time. It may be reasonable to conclude that, the thick underwood has protected them from this enemy; as those standing near, in open, cultivated ground of like quality, have not escaped.

As an ornamental tree, the locust, with its light and elegant foliage, its sweetly perfumed flowers, its beautiful pendent form, often "feathering to the ground," will always be entitled to a place in our parks, lawns, and pleasure-grounds; but, as Gilpin says, "its beauty is frail, and it is of all trees the least able to endure the blast. In some sheltered spot it may ornament a garden; but it is by no means qualified to adorn a country. Its wood is of so brittle a texture, especially when it is encumbered with a weight of foliage, that you can never depend upon its aid in filling up the part you wish. The branch you admire to-day may be demolished to-morrow. The misfortune is, the acacia is not one of those grand objects, like the oak, whose dignity is often increased by ruin. It depends on its beauty, rather than on its grandeur, which is a quality more liable to injury. I may add, however, in its favor, that, if it be easily injured, it repairs the injury more quickly than any other tree." It has also "the further disadvantage of coming late into leaf, and being among the very first to cast its foliage in autumn, and this without undergoing any change of color, or exhibiting

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those beautiful and mellow tints which enrich the landscape at this season of the year."*

The *Rose-flowering Locust* has sparingly been planted, as an ornamental tree, but less so than the preceding species, and as such, from its medium size, rapidity of growth, and its large, conspicuous roseate flowers, it well deserves a place in every collection. But, let it be remembered, that, like the common locust, its creeping roots are a great nuisance in all cultivated grounds, that its leaves and wood are attacked in a similar manner by insects, and that the tree itself is comparatively short-lived.

The *Honey-Locust*, or *Three-thorned Gleditschia*, has also been extensively cultivated as a hedge-plant, as well as a shade-tree, throughout the Atlantic States, from the banks of the Mohawk to those of the Savannah. For the last-named purposes, from its delicate, light-green foliage, which is rarely attacked by insects, and the beautifully varied, graceful, and picturesque forms it often assumes, with the singular features afforded by its large pods and spines, when sparingly planted in parks and other ornamental grounds, it holds a high rank. As a hedge-plant, however, or as a tree for shading crowded streets in town, it does not appear to be well adapted.

The *Kentucky Coffee-tree* also occupies a wide geographical range, and is found more or less planted, as a shade-tree, in most, if not all, the Middle and Northern States of the Union. Being very hardy, and remarkable for the beauty of its dense foliage, in summer, it forms an appropriate object for planting in parks, and for lining broad avenues, or public highways. But, from its large size, and the unsightly aspect presented by its blunt, naked branches in winter, it seems unfitted for the streets of cities and densely populated towns.

The *Balm of Gilead* (poplar), on account of the medicinal value attached to its buds, and the delightful odor they diffuse through the air, in spring, has been more frequently planted in the neighborhood of human habitations than any of its congeners. It has the advan-

†Trees of America, pp. 203 et 208.

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tage of growing in almost every soil, however poor, where it readily attains the size of a second or third-rank tree; but as a subject for planting in streets near dwellings, or in gardens, it is particularly objectionable on account of its long, creeping roots, which run just below the surface, and throw up numerous suckers, difficult to eradicate, when wounded by the spade or the plow. And to these objections, may be added the cottony, worm-like aments, with which the ground is strown, soon after the tree is in flower, and what appears to be more serious still, is the liability of its branches and even the trunk itself, when very tall, to be broken, or shattered by the wind.

The *Catalpa*, from its large bunches of white flowers, marked with purple and yellow spots, with which it is clothed in summer, has been extensively planted in streets, parks, and other ornamental grounds, from the State of Connecticut to Georgia, and westward beyond the Mississippi. This tree is of rapid growth until it reaches the height of twenty feet, which in a deep free soil, it will usually attain in ten or fifteen years. Seedling plants, under favorable circumstances, usually begin to bloom at about the age of twelve years; and in situations where the wood becomes well ripened, they are annually loaded with flowers, making a splendid appearance, not only by the large size and lively colors of the blossoms, but by the fine pale-green of their leaves. The catalpa, however, does not seem fitted for the general purposes of ornament, as it differs from most other trees by its wide-spreading head, disproportioned in size, when compared with the diameter of the trunk, and in the fewness of its branches, which are late in putting forth leaves in spring, and being among the first to shed them on the appearance of frost in the fall.

The *Silver-leaved Maple*, or *White Maple*, as it is sometimes called, of late, has become a great favorite for ornamenting the streets of cities and populous towns, for which purpose it would be admirably adapted, were it not for the divergent character of its branches, and the great height to which it arrives at an age of twenty or thirty years. The branches are believed to form a head more spacious, in proportion to the size of the trunk, than almost any other tree; and instances are on record where this species has attain-

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ed the height of fifty feet in twenty-five years. A case in point is now before me, in Brooklyn, where the branches of two rows of this tree have completely over-arched the public way, although they have not yet been planted fifteen years. There is another objection to this tree when grown near houses, that is, its leaves are preyed upon by several species of insects, but to a less degree than the linden, the abele, the horse-chesnut, and the elm. As an ornamental tree, notwithstanding these objections, the silver-leaved maple is highly prized, on account of the rapidity of its growth, the graceful, divergent character of its branches, the beauty of its leaves, and the profusion of its large early fruits, or keys. It is admirably adapted for large parks as well as open lawns, and for lining broad avenues, or public highways. Like the weeping willow, with, which it forms an appropriate associate, it serves an admirable purpose for overspreading artificial ponds, and other waters, with a mirror-like surface, where, as Michaux expresses it, "the brilliant white of the leaves beneath, forms a striking contrast with the bright green above, and the alternate reflection of the two surfaces, in the water, heightens the beauty of this wonderful moving mirror, and aids in forming an enchanting picture."

The *Red-flowered Maple*, or *Soft Maple*, as it is usually called, from its wide geographical range, and great resemblance to its congener, the sugar-maple, has long been planted as an ornamental tree in all the older States of the Union. It is attacked by the same species of insects as the silver-leaved maple, its only objection; and whether viewed in the beauty of its flowers, in early spring, or admired for its red fruit, or keys, in the beginning of summer, or its crimsoned foliage, in autumn, it deserves a place in every situation recommended for the sugar-maple; particularly in localities where the latter will not grow.

The *American Ash*, or *White Ash*, as it is generally called, although occupying a greater extent of territory, than most other trees, has not hitherto been much cultivated, either for ornament or other use; but, from the rapidity of its growth, the great value of its timber, when fully grown in open situations, and the beauty of its foliage, which is rarely attacked by insects, this tree deserves to

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be extensively planted, in lines for bordering roads, and in small groups for ornamenting pastures, parks, and the larger class of lawns.

The *Black Walnut*, from its wide geographical range, and the value attached to its timber and fruit, as also for its shade, has been much planted in the neighborhood of dwellings, in almost every part of the Union. When insulated, in an open space, its branches extend in a horizontal direction to a great distance, forming a spacious head, and consequently an ample shade. Hence this tree can be advantageously substituted for the American elm, for planting in pastures, in parks and lawns, or along public highways.

The *Stag-horn Sumach*, in the Northern and Middle States, is frequently to be met with in front of rural dwellings, where, when trained to a single stem, it forms an interesting little tree, and well deserves to be cherished, from its large and beautiful foliage, its various colors in autumn, and its spikes of dark-red fruit, which diversify the scenery of a northern winter. But as it is of an open, irregular growth, and of not many years' duration, it should never be placed where it is intended to serve as a screen. The most striking situation, in which it can be placed, is when standing alone on a lawn.

The *June-Berry*, or *Shad-blow*, is occasionally to be met with, in gardens and collections, where it is much esteemed, in early spring, for its profusion of flowers, and in autumn, for the fine dark-red, assumed by the leaves. Adding to these properties, its limited growth, agreeable fruit, which is eagerly sought after by numerous species of frugivorous birds, and its peculiar adaptation to the climate of almost every part of the territory of the United States, it well deserves a place in every garden and lawn.

The *Osage Orange* (Maclura) from its great resemblance to the common orange, its beautiful shining foliage, which it retains longer than almost any deciduous tree, and from its fine, large golden fruit, is universally admired wherever it will grow. It is perfectly hardy in every State in the Union, south of Massachusetts, is free from the attacks of insects, and is unsurpassed for hedges by no other tree.

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To the fore-mentioned trees, might be added the American holly, and several species of the pine and fir tribes; but as the cultivation of evergreens, in themselves, would form the subject of a long essay, as also would our native nuciferous and fruit-bearing trees, as well as our flowering shrubs, they are necessarily omitted to give place to a few remarks on the injudicious selection and improper manner of treating the shade-trees of some of our cities and larger towns.

Without entering in detail into the monotony of that large "sylvan park," the Boston Common, with a variety of soil and surface, that would admit of one of the finest arboretums in the world, or to dwell upon the seventeen other "Cities of Elms" in other parts of New England, or upon the long, formal rows of exotics in our national metropolis, where, before all other places, we might be led to expect a conspicuous display of indigenous trees, I will pass to Brooklyn and New-York. These two cities probably contain a greater number of species of cultivated trees, native and foreign, than is occupied by the same extent ofg round in any part of the Union. Hence it may be inferred, that in planting streets, out of so large a number of trees, an injudicious choice, in many cases, would be made, which would unavoidably be attended with consequent evils. The trees of this description, which most predominate, are the Weeping Willow, the Button-wood (sycamore), the European Linden, the American and European Elms, the Silver-leaved Maple, the Catalpa, the Three-thorned Gleditschia, the Tulip-tree (white-wood), the Horse-Chesnut, the Paper-Mulberry, and the Abele. None of these trees, nor any others of equal dimensions, should ever be suffered to attain one-half of their maximum size, within fifty feet of any human dwelling, either in country or town. These trees, to be sure, when young, like striplings shoot into graceful forms, with a lightness and an airiness about them, that is pleasing; but when they expand into their natural proportions, and attain their full growth, they become too large for the situations they were intended to occupy, and by the fullness of their foliage, often produce an unhealthy shade. For we have every reason to belive that many residences, which naturally would have been salubrious under other circumstances, are rendered damp, gloomy, and unhealthy, during certain periods of the year, by the superabundance of trees

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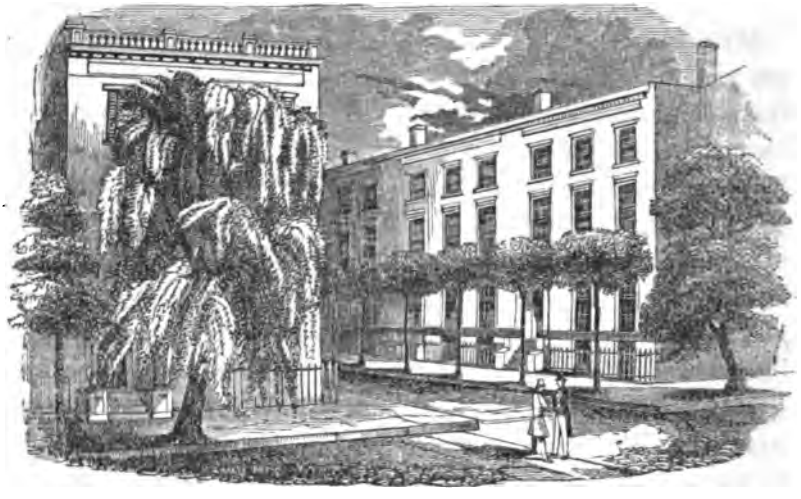
and shrubbery, growing in their immediate proximity; and besides, when thus planted, the leaves of several of the fore-named trees, serve as the food of myriads of millions of insects, or their larvæ, which so often infest the rooms of our houses, and annoy passengers in the streets. What I have stated above is plainly illustrated in the adjoining figure, by the two largest trees, the like of which repeatedly



(Fig. 4.)

occur in Brooklyn, and even instances might be cited where entire blocks of houses are dampened, darkened, and overshadowed by tall forest-trees, which are liable at any season to be uprooted, or shattered into fragments by the violence of the wind. The pruning of these trees, in many cases has been entirely neglected, while in others the operation has been carried too far. It has not unfrequently happened, that, when the tops of the trees became sufficiently expanded to darken the houses, or intercept the view, in order to remedy the evil, the whole of the lower branches have been cut away, leaving the upper ones to form an unnatural and often an ill shapen head.

The streets of the cities and larger towns of this State, seldom exceed three or four rods in width, and consequently will not admit of the growth of trees much more than fifteen or twenty feet in height, without more or less injury, or inconvenience, to the neighboring habitations. In several cities of Europe, the planting of

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trees and shrubs in streets is regulated by law, and in some cases, it is required that they be of such a character as will not reach above the lower parts of the windows of the second stories, as denoted on the right-hand side of Fig. 4. The trees and shrubs that would answer such a purpose in the cities of New-York, with judicious pruning and lopping, are the Red-flowered Maple, the Sugar-Maple, the American White Beech, the American Red Beech, the Osage Orange, the June Berry, and the flowering Dog-wood. The latter, or some allied species, will flourish in any part of the United States, and can be removed, if taken up with care, of almost any size, at which it will grow. In order to effect this, it is only necessary to take up a ball, or mass of earth, adhering to the roots, and plant the tree at the same depth in the ground, and with the same side of the trunk towards the south, as originally grew in the nursery, or the woods.

In selecting any of the above-named trees, it would be advisable to obtain those grown in nurseries in the immediate vicinity of the sites where they are intended to remain; and such as grow naturally to the greatest perfection in the neighboring forests should be preferred, where the soil and climate are essentially the same.

A few words on the parks and public squares, in Brooklyn and New-York, seem to demand a notice, as not a single Oak, Beech, Birch, American Ash, Walnut, Negundo, Dog-wood, Holly, and numerous other native trees and shrubs, is to be found in one of them. In general, they are planted with the same kind of trees, as the streets of these cities, with but little regard to the grouping of them into pleasing and picturesque assemblages, and the selection is often bad, the trees in some cases being totally unfitted to the soil in which they grow. For instance, the frequent occurrence of the weeping willow, on the Battery, where, for reasons already stated, they are annually uprooted by tempestuous winds. All of these parks, as well as the pleasure-grounds throughout this State, doubtless would admit of the successful cultivation of at least one hundred kinds of trees, which if tastefully grouped and contrasted, would lead to a point of human refinement unsurpassed by any collection in the country, even Washington square, in Philadelphia, with its groups of beautiful Bur-Oaks (*Quercus macrocarpa*), Pin-

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Oaks, (*Quercus palustris*), Catalpas, Silver-leaved Maples, Negundos, Kentucky Coffee-trees, Liriodendrons, and a host of other trees, from two to three yards in girth.

It is much to be regretted, that the plan proposed some twenty years since by the late M. Parmentier, of Brooklyn, for planting the Park, in New-York, was not adopted, and every species of American tree, that could possibly be made to grow, placed there; the magnificence of which could only be equalled by a grand national arboretum, in the city of Washington, where almost every native tree would live. But this we cannot reasonably expect to be done; for, in the progress of civilization in all countries, there are many much more important things to be considered than the culture of trees and shrubs.

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CIRSIUM ARVENSE—CANADA THISTLE.

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PRIZE ESSAYS.

EXTIRPATION OF CANADA THISTLES.

By A. Stevens.

The executive committee of the State Society offer their premium for *experiments* in the destruction of the Canada Thistle. I deem a *mere detail* of experiments in the destruction of them valueless. Nothing new in this direction has recently been done, nothing new can now be, in the modes of extirpation. Forty years since all the methods now adopted and recommended were well known and tried, both successfully and unsuccessfully. The Transactions of the two former State Agricultural Societies of this State contain articles on this terrible agricultural pest, and the agricultural periodicals are filled with them; full details are given, not only of the plant, its character and rapid diffusion and threatening invasion of new regions yearly, but of the full and perfect means of its destruction.

A slight glance at these various communications will show how little each experimentalist referred back to what had been done by others; and will disclose the fact that not one mode of destruction that has hitherto been tried, but had both succeeded and failed. It is true that where double means were used, not unfrequently in cases of success, that success was ascribed to the wrong cause, and the recommendation of him who made the experiment, led others to the adoption of means, that were not only fruitless but positively pernicious. Following the advice of those who had met success, many farmers wasted labor, and spread and strengthened their enemy, until in despair they left it in full possession of their fields.

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The history of these various experiments in the United States, as well those which were successful as those which were failures, shows that they have been made chiefly in the States of Vermont and New-York and Canada; and as yet the Canada Thistle is confined mainly to these sections of this country. A detail of all these will prove that knowledge on this subject has not increased for years; that ignorance and superstition are as rife now as fifty years since; and that all the experiments have been both successful and unsuccessful. It will also show that, in no one of them, have *the circumstances* attending the experiments been given; and this utter inattention to all that there was of value in the experiments has continued to this time. As yet no one has thought of generalizing the accumulated facts of past experience; or of fully noticing in his own practice, the special circumstances which attended each and every experiment made. Had this been done in the first experiments, there had been now nothing left to learn and vast fields of this the most inveterate enemy of agriculture would never have had a being. The want of the proper knowledge has occasioned failure, and failure has begotten despair. In many regions of our country improvident and non-progressive farmers have come to the conclusion, that they would do the best that the thistle would permit; and have supinely resigned themselves to the advance of their enemy, which has taken advantage of their neglect and spread itself far and wide. And yet had our farmers prevented its growth to seed, it would now have flourished on this continent only in Canada, whence it was introduced among us.

History of the means and experiments for extirpation.

With a view of furnishing a complete detail of all the various modes adopted for exterminating this formidable weed, it will be proper to narrate in the order of time the recorded experiments made for that purpose. In doing this the list will be confined to those made in this State, as they will fairly represent those made elsewhere.

It is due however to the State of Vermont to ascribe to her the first systematic attempt to stay the progress of the Thistle. Many years since (about 1795) that State passed a law directing its de-

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struction. As the Thistle, in its progress southward from Canada, first invaded Vermont, it would be natural that she should first attempt its arrest and extirpation. It was not however, until long after the weed was planted on our own soil that even Vermont, whence the enemy came to us, enacted laws to prevent its dissemination and extension. Having learned how great an objection it is to agricultural pursuits, and how difficult to be subdued, the farmers of Vermont early commenced and with perfect success, the practice of various modes of extirpation; and to them doubtless we are in part indebted for a knowledge of the most effectual means of resisting the advance and securing the destruction of the Thistle. Had the effort been universal the plant would have been subdued if not exterminated.

While ascribing to the farmers of Vermont this deserved praise, it may be properly said and with a truth, that will doubtless surprise very many who have thought they were the originators both of the policy and the means of accomplishing the desired purpose, that knowledge on this subject has not advanced in this country for forty to fifty years. As much was known at the beginning of this century as now, of the requisite modes, and it is to be regretted that they were not systematically practiced, and if necessary by force of law, to the extirpation of the Thistle while yet easily overcome.

So long as the means of the destruction of the Thistle were unknown the dread of it was greater in Vermont than after that knowledge was obtained. When informed of the means of its destruction indifference to it seemed to arise, and indeed in many instances the opinion obtained that the Thistle was a valuable plant, furnishing food to hogs in its roots and fodder to cattle in its stalks and leaves; and some writers on the subject during the enforcement of the law of that State were even apprehensive of the loss of a great blessing in its extirpation. Such a spirit would of necessity suspend the active enforcement of the law for its suppression, and it now sleeps in the statute book a dead letter.

The Canada Thistle seems to have invaded this State to a degree sufficient to arrest public attention some forty years since. The first State Agricultural Society of this State, was established in

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1791, and incorporated in 1793. It was limited to 1804 in its existence. Having expired by the limitation of the act creating it, it was revived by act of the Legislature in 1804, and made a perpetual corporation. The Society had its attention early directed to the subject of the Canada Thistle. The alarm had become so great in the public mind, that in 1813 the Legislature, at the instance of that Society, passed an act by which the inhabitants and freeholders of the towns of *certain* counties, were authorized to make provision for destroying "noxious weeds on the lands of any person residing in the town, at the exclusive expense of such person. By the 24th section of the act, the freeholders and inhabitants of the *several towns* of the *State* are authorized at their annual town meetings to make provision for and allow rewards for the destruction of the Canada Thistle; the money to be raised and levied with and in the same manner as other expenses of the town.

In the fourth volume of the Transactions published by the first agricultural society, in 1816, at page 66 of Part first, there is the first article I have met with on the subject in the papers and publications in this State. It was communicated to the society by Simeon De Witt in March 1815 to whom a gentleman of the name of Nathaniel Brown furnished a statement that he had destroyed the thistles by covering them with straw to a depth of five or six inches. At page 29, Part second, of the same volume published in 1819, is a communication from Mr. James Furguson, of Albany county, made in May, 1818, detailing his method for their destruction, viz: "to mow them down in a wet day in August, just above the ground, the stalk being hollow will fill with water, which will destroy the plant."

In the year 1819, the Legislature of the State of New-York passed an act creating and establishing a Board of Agriculture. The Board was organized January, 1820. It published three volumes of Memoirs, one in 1822, one in 1824, and one in 1826, in which year the Board ceased to exist. After the passage of the act and before the organization of the Board, an agricultural paper was established by Solomon Southwick, in Albany, called the Plough Boy. It was commenced on the suggestion of those who were the projectors of, and instrumental in procuring the passage of the act

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creating the Board. On the organization of the Board the Plough Boy was made the official journal of the Board and continued so for three years. In the first volume may be found several articles on the destruction of the Canada Thistle. The first at page 6, is from Gen. Armstrong. It speaks of burning straw of buckwheat and wheat or oats &c., over the patches as a paliative to prevent extension. This had been much used in Vermont as a means of destruction as well as a preventive of extension of the Thistle; but there are no *records* in our State of experiments in burning any combustible on the ground occupied by them, as a means of destruction, prevention or limitation. Gen. Armstrong tried brine with success as an extirpator. Had that failed he would have tried "apple pomace spread thinly over the Thistle—knowing that *malic acid* would destroy the most vigorous and tap rooted plant."

In the same volume of the Plough Boy there is a communication on the Canada Thistle from E. C. Genet, formerly Minister from France to the United States. He says, "Many essays have been made in Europe and America, by the most skilful botanists and agronomists, to destroy that pernicious plant. Frequent and deep plowings, repeated mowings, superincumbent substances, burnings, and thick sowings of clover and other grass have been used, but none of these means have conquered the enemy. I coincide with Gen. Armstrong on the efficacy of salt solutions to subdue the Thistle. I have used it for several years for the same purpose and have invariably succeeded. But I differ from the General on the explanation of that phenomenon. He seems to ascribe it to the chemical action of the salt, and imagines that the malic acid of apple pomace would have the same effect. I ascribe it on the contrary to the simple mechanical operation of grazing animals, who resort with an astonishing avidity to the spots impregnated with pickle, trample and compact the ground with their feet, skim the surface with their tongues and their teeth, devour the young sprouts as soon as they appear, and deprive, entirely, the roots of the Thistles, of their necessary communication with the atmosphere, by their *tracheas* or air conductor, destroy in them the source of vegetation and occasion their much desired death." * * * "On a lot containing Canada Thistles which had been occasionally sprinkled with salt for the use of a flock of 300 Merinoes, in 1815, I have not been able

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to discover the least remnant of that pernicious plant in the ground, while where the pickle had been put on the thistles not exposed to the browsing of sheep or cattle, the salt seems rather to have invigorated than extinguished the prolific powers of the Thistle." Genet advised lots with the Thistle on them to be turned "as soon as possible, into pasture well stocked with grass seed and to sprinkle the ground occupied by those plants with pickle or salt."

In the same volume of the Plough Boy appears another communication from an anonymous person, furnished for publication by George Tibbetts, President of the Rensselaer County Agricultural Society, to whom it was addressed. The writer says, "The Legislature of Vermont passed an act about twenty-five years ago (this was written in 1819) obliging all owners and occupants of land which contained the Thistle, to mow them when in blossom. This had the effect to destroy a part only; and the reason was not *then* known why a *part* only was killed. The project was *generally* given up as not being *sure* to answer the purpose. But it is now fully known, that if they are cut down just before, or in a rain, when they are in blossom, so that the hollow of each stock becomes filled with water, they uniformly die; and many persons have profited by the discovery and entirely cleared their farms of this very destructive nuisance.

In the third volume of the Memoirs of the Board of Agriculture there is a communication by Martin E. Winchell of Dutchess county, detailing his experiments in the destruction of the Thistle. He applied straw by covering the Thistle over three feet thick; salted his cattle and sheep on the Thistles for three years; and covered them with a thick layer of apple pomace. All this he found of no avail for their destruction; they spread rapidly from the roots and grew thicker and ranker. He applied brine to them, first cutting them off with a hoe. He plowed the ground containing the Thistles from the first of June, once in two weeks until the middle of September; a few only were left, which were next year destroyed by plowing. Two years plowing he deems effectual to destroy them. He also destroyed them by cropping them off continullay by sheep and cutting them up with the hoe. Still another method, which he adopted and which was successful, was to cover

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them with boards. These experiments were made in various years, commencing in 1814 and ending in 1824, and seem to have been made by Mr. Winchell in consequence of the action of the first agricultural society of this State, and of the act of the Legislature, passed to induce the destruction of the Thistle. Mr. Winchell made a communication of his experiments to the Board of Agriculture in 1824, at their request.

Here closes all official action of any of the State societies.

With the publication of Mr. Winchell's experiments, all interest in the subject of the extirpation of the Canada Thistle seems to have slumbered at least, if not to have died. For some years nothing appears to have been said on the subject in the agricultural publications.

This alternate action and repose of the public has marked the history of the Canada Thistle for the last fifty years. The experiments of which the above is a detail, were the result of this action. When it was so clear that the enemy could be conquered, the public mind grew indifferent. But the energy of the Thistle did not slumber while the farmer did, and it was some years before the alarm arose again.

During the period when it was the subject of the official action of the first agricultural society and of the Board of Agriculture, the Canada Thistle had not sufficiently invaded the western portion, or wheat growing section of this State to create alarm there. From 1820 onward, it however advanced so rapidly, that by 1830 it became a matter of deep solicitude to the wheat farmers of that region.

While knowledge has been abundantly furnished in reference to them, their natural history, their injury to crops, and the means of their destruction, there has not been, however, any systematic or general attempt to eradicate or even limit them; and it is to be feared that they will never be limited, much less eradicated. All that can now be done is to show that the thistle can be extirpated and this will secure good farmers from the pest, and enable negligent ones to destroy them whenever and wherever it may be necessary. But

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this will still leave a host of shiftless ones, whose inaction will permanently secure the continued existence of this formidable agricultural enemy.

A digest will now be given of the various published means of destroying the Canada Thistle. This will serve several purposes. It will show that knowledge on the subject of the methods, has not advanced in years; that the subject was perfectly understood long since in all particulars, except one; and that that one is as little known now as then; and which although not essential to the destruction of the thistle, yet accounts for the failures at different places and times of the methods that at other places and times have succeeded. This detail will also inform those who may chance to read it, that all the ordinary and properly available and *effective* means of destruction being known, more discussion will not extend knowledge and can only waste time and occupy space in our agricultural periodicals, better devoted to other subjects. Many a writer who thinks he has been quite original in the discovery of a method of destruction, would cease his claim to originality, should he read the history of the war on the thistle; and would hesitate before giving to the public as his own, what doubtless was suggested to his mind by some former experiment, though doubtless the suggestion was forgotten.

After the publication of the third volume of the Memoirs of the Board of Agriculture, all general attention to and excitement on the subject seems to have ceased for a few years. This may readily be accounted for, when it is known that there was no agricultural paper with a general circulation published in this State from 1823 when the Plough Boy ceased its existence, to 1831, when the Genesee Farmer was commenced.

The subject was taken up and well and much discussed in the Genesee Farmer. The Cultivator, started three years later, also paid much attention to it, mainly following and copying its predecessor. Since the union of these two periodicals, the Cultivator has continued the discussion of the subject. The substance of all that ever has and perhaps ever can be said on the various methods of the destruction of thistles may be found in these two papers.

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And here again I will remark that *had there been some general organization and arrangement of the methods and facts, with an adaptation to circumstances, locality, seasons and soils, no more could be wished.*

The Genesee Farmer has become a standard authority on the subject. A detail of its methods may justly commence the list as well from their rank in priority of time, as compared with any of the present agricultural periodicals, whether in this State or elsewhere, as from their rank in point of merit.

In the Genesee Farmer, volume first, page 84, legislative action is proposed. At page 100, brine is stated to be a remedy, if assisted by swine in digging the roots; page 169, mowing in bloom and plowing and planting potatoes; mowing, the sod to be turned immediately after mowing, and buckwheat sown; page 196, plowing repeatedly; page 252, mowing is deemed of little value and use, but plowing, hoeing and pulling up stalk and root effectual; brine also advised, and plowing and planting potatoes stated to have been effectual, the plowing and hoed crops having been continued two or three years; page 308, straw was found destructive if covered all over the Thistle quite thick, say two to three feet, to be fresh, not decayed, as decayed straw is and acts as a manure, and promotes the growth of the thistle; lime, rubbish or old plaster found useless; page 394, plowing, hoeing and tillage, with crops of all kinds hoed and broadcast, are said to be failures; summer fallow effectual; plowing from spring to midsummer repeatedly, to be followed with buckwheat sown very thick succeeds; page 404, brine is recommended and stated to have been effectual; salt is sure to destroy the thistle, but if applied only once, cattle and sheep must be kept away; if the plant be first mowed and repeatedly salted to attract cattle and sheep for the whole season, they may be admitted and assist in the destruction; mowing in the bloom when the stalk is hollow, and watering the cut stalks if there be no rain are destructive; legislative action necessary and urged.

Genesee Farmer, vol. 3, pages 13, 21, 38, salt recommended, and said to be surely destructive; page 66, plowing in the old of the moon, (last quarter) in June, July, August and September will era-

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dicate; page 204 first mow when the thistle is in bloom, then plow deep immediately, and plow shallow a second time; if the thistles are not then exterminated, fallow the next year; buckwheat sown on the ground where the thistles have been turned under, and fallowed with wheat in the fall when the buckwheat is cut, will extirpate; page 322, mowing, plowing and salting, were all failures, but repeated plowings rapidly following each other as the plant started, were successful.

Genesee Farmer, vol. 4, page 21 and 30, repeatedly cutting the thistle below the surface of the ground with a hoe, the ground being planted in corn was successful; salt was not destructive, but if cattle be repeatedly salted on the ground, the thistle will be destroyed, as the plant will be constantly eaten off; apple pomace found destructive; page 67, mowing a failure, but apple pomace was destructive; page 218, buckwheat sown on the thistle ground destructive; plowing the ground when the plant is in bloom in June and sowing buckwheat, and the plant will again be in bloom when it is the proper time to cut the buckwheat in the fall; page 242, twenty years mowing or cutting not destructive at all; buckwheat will reduce but not wholly destroy; page 324, mowing on the same piece a failure for five successive years, but succeeded on the sixth; hoeing twice a week from April to August will destroy.

Genesee Farmer, vol. 6, page 61, plow deep in the fall, again in the spring, and a third time when ready to plant, put in potatoes, hoe them well, and once a week cut off all the thistles until the potatoes are dug, then plow again, and the second year plant with corn and cut the thistle with the hoe once a week through the season and all will be dead; page 90, thistles must not be touched early in the season, as they are spread and strengthened by hoeing or plowing, let them bloom, then cut them down, and plow the ground and plow and use the cultivator until October, not permitting the plant to grow, then sow wheat, and in the spring sow large clover seed with plaster, mow the clover and sow plaster two years and the thistle will be smothered and dead; page 91, any thing that will keep the thistle below the surface of the ground will kill it; page 134, cut in June with a hoe and four times afterwards during the season, and destruction is certain; on large fields seed thick with

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clover, mow the first season for hay, pasture the second, and with the hoe cut straggling plants, and extermination is certain; page 149, mowing a failure, it may thin, check, but not exterminate; salt is not to be depended on, if used, cattle and sheep must not be allowed to run on the ground; straw heaped on the thistle will destroy; chips piled over them promote their growth; summer fallowing with plowings as often as the plants appear above ground, effectual; corn and potatoes planted and the thistle constantly hoed down will be effectual.

Genesee Farmer, vol. 8, mowing for three or four years at the period of bloom, destroyed the thistle.

Cultivator, vol. 1, page 53, plant any hoed crop the first year, fallow the second, plowing once in two weeks, and sow wheat in the autumn and the thistle will die; salt cattle often on them and keep their tops down and they will die; nine to ten times plowing necessary to kill them; page 62, plowing seven times in one season killed them; page 63, hemp sown thick destroyed them.

Cultivator, vol. 2, page 56, to plow in the last quarter of the moon in June, and in every last quarter of the moon until September, will destroy them; page 92, mow them near the ground, when in full bloom or a little past, and they will die; page 137, to mow them just before they blossom is destructive.

Vol. 4, cut them three times in a season, in June, July and August, just below the ground and they die.

Vol. 8, page 79, to plow several times in a season for large pieces, for small pieces cover with turf, and mowing and cutting with a hoe will exterminate; page 101, to cut with a hoe close to the ground the first of June and in August for two season; page 107, cut them an inch and a half below the ground in the full and old of the moon in May, June, July, August and September; page 109, mowing them in the last quarter of the moon in July, and while the sign of the zodiac is in the heart, will destroy, and a single mowing sufficient; page 116, cut them in a hot day when in the blow and they will die; page 180, are killed by plowing three times in a hot and dry season, also by salt, by apple pomace, by pulling up.

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Cultivator, vol. 9th, 48 --Lay the ground down to clover and grass; mow for two or three years before the flower bud bursts, and not earlier or later, if cut at that time they will die; hot or dry weather has nothing to do with it; cut in dry or wet weather at that stage they will be killed; page 95, plow in April, harrow in May, cross plow in May, drag in June, and again harrow across the plow furrow, and then sow one bushel of buckwheat the last of June, and they will be destroyed; page 118, plow early in April and sow any spring crop and the thistle will die.

Cultivator, vol. 10th, 130.—To cut them below the ground and apply salt will destroy them.

Cultivator, new series, vol. 1. page 238.—Mow them when just past full bloom and they will die; digging the roots a failure.

Cultivator, new series, vol. 2. page 237, at the time of flowering mow them, then plow them and turn under well and deeply, and plow them once a month till October, they will be dead, and wheat may then be sown; page 306, cut them off with a hoe as often as they appear, three or four times in a season, and they die.

This catalogue of the various modes of destruction of the Canada Thistle will show that no one method, but has both succeeded and failed, and that too where it has been fairly and fully made.

In England, where the thistle is very abundant, the methods of extirpation are, summer fallowing, with frequent plowings, mowing in bloom and cutting with the hoe; cultivating hoed crops; cutting them in meadows and pasture grounds with the hoe or spade, the use of salt, sowing clover thickly to smother them, pulling them up. These processes are repeated as often as may be necessary. The destruction of the thistle in England is deemed a certain matter, but requiring care and attention; and it is the greater on account of the moisture of the climate.

The History of the Plant.

The history of this plant is very short. It is found in every part of Europe. In many of the countries of that quarter of the globe, laws are in existence for its destruction; and in France they are severe and imperative, and allow the destruction of it on the

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lands wherever it may be found, at the expense of the owner. In England it is found every where. There it is called common thistle, corn thistle, way thistle, san wort, field thistle, and *cursed* thistle. It is most commonly known under the last name. It was described by Linnæus a hundred years since, under the name *Serratula arvensis.*

Tradition says it was introduced into Canada by the early French settlers from France for the purpose of feeding swine. Still another tradition makes it to have originated in Canada, and to be indigenous there; from thence a monk, struck with the beauty of the flowering plant, carried it as a rarity, two centuries since to Paris, whence it has been distributed over all Europe.

That it is European in its origin there can be no doubt. A thistle has been known in England under the name of the *cursed thistle* time immemorial, and the name still exists and is applied to this very plant and to none other.

From its introduction into Canada it has slowly spread over nearly all Lower Canada, has invaded Vermont, northern, middle and western New-York and is to be found in New-England. Its progress is southward slowly.

That it is not a native of this country is evident. It is found *all over* Europe, but is confined *to a small portion* of America. All other thistles indigenous in America are found all over it both north and south, in corresponding latitudes and temperatures. This alone of all the species known in America is not general. It was first known two centuries since in Canada, and then only existed in the vicinity of the missionary establishments, whence gradually and slowly it has extended. If it be indigenous here, it possesses a power of dissemination far greater in Europe than in its native climate. In England there is no tradition or belief that it is other than indigenous there, although it is known to be brought there continually in seeds, especially clover, from America. But the cursed thistle existed there before seeds were introduced from America. The thistle is a plant of cultivation. It will not grow in the woods; it must have sun and exposure. Its seeds will not germinate in continuous

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and dense shade. Canada was a wooded wilderness when the French discovered and occupied it and if the plant be native there, it must have originated after its settlement and cultivation. Could the seeds have lain dormant for ages, while its grand forests grew and when those forests were destroyed, come forth? It is not probable. Its limited sphere of existence in America and its universal prevalence in Europe, show that it is a foreigner with us. It would not have disseminated itself so widely and rapidly in Europe had it been introduced there from America, while in its native climate it has spread so slowly and is *still confined to so small* a region. Professor Low of the University of Edinburgh, Scotland, in his Elements of Agriculture says, "In some parts of Scotland they were once so abundant that they used to be cut regularly for five or six weeks in summer to supply food for cattle. In well cultivated districts they have been got under. New lands brought into cultivation, are often covered with this species."

It is probable that in the United States this belief that the plant is indigenous to Canada, has arisen from its name as known among us. It came to the United States from Canada, and hence doubtless, has arisen the name we give it and the supposition that it is an American plant. In Canada the French do not call it the Canadian thistle, but by the name of the plant as known in France and it is traditional there, that it was brought from France. The fair conclusion from all that is known of the plant is, that it is a native of Europe and an introduced plant in America.

Botanical description of the Plant.

In the Natural History of New-York, published by authority, part second, is contained "A Flora of the State of New-York," by Dr. John Torrey. In volume 1, of that Flora, page 407, is a description of the Canada Thistle, viz:

CIRSIUM ARVENSE. *Canada Thistle.*

"Rhizoma creeping, stem paniculately branched; leaves oblong; lanceolate, sessile, slightly decurrent, smoothish, sinuate-pinnatified, undulate heads small and numerous; scales of the involucre ovate-lanceolate, mucronate, the outermost tipped with a short spine, *De Candolle, Prodromus, &c.*, 6, *page* 64; *Torrey and Gray Flora*

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of North America, 2, *page* 460; Serratula arvensis, *Linnaeus*; Carduus arvensis, *Smith, English Botany t.* 975; *Hooker's Botany of the Northern parts of British America*, 1, *page* 301; *Beck's Botany, page* 172; *Darlington Flora Cestrica, page* 439; Cnicus arvensis, *Pursh Flora of North America*, 2, *page* 506; Bigelow *Flora Bost. page* 291; *Torrey Compendium, page* 281."

"It is perennial; its rhizoma descending deep into the earth and then spreading, very tenacious of life. Stems two or three feet high smooth, striate and angular; the branches slightly woolly, leaves three to six inches long and about an inch wide, sometimes a little woolly underneath. Heads, by abortion, diœcious. Involucre usually globose-ovate, but sometimes oblong; the scales appressed; some of the outer ones tipped with a very short bristle or weak spine. Flowers pale purple or rarely whitish."

"It is found in cultivated fields, road sides, &c. Is very common in the northern and western counties, but as yet rare in the southern counties. Fowers in July and August."

"This is one of the most troublesome weeds in the Northern States, and was undoubtedly introduced from Europe. In some parts of the State it is known by the name of *Cursed Thistle.*"

Popular description of the Thistle.

The general appearance of ordinary thistles is familiar to every body. They will serve as a type of the Canada thistle. Its resemblance to them is strong; it is more graceful and more beautiful. In general size it is less, in height much the same. Its stems are smaller and less branched, and greater delicacy marks the whole plant in all its parts.

We will divide it into two parts, 1, the stem above, and 2, the root below the ground.

1. The stem or stalk is from two to three feet high, varying with the soil and the season, is angular, having three sides; smooth and grooved; is branched and has many and long branches when the stalk is growing alone, and but few and short ones when growing in dense patches; the lower ones are leaf branches, the upper ones flower branches with some leaves on plants growing singly, but

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in dense patches the branches are all flowering ones, and the leaves below sit right on to the main stem, the flower branches are divided and separate, pass off from the main stem laterally at sharp angles and upward and each upper lateral flower stem near its end sends out separate flowering heads. The branches are slightly woolly.

Canada Thistle; a plant growing alone.

The leaves are from three to six inches long and about an inch wide, and sometimes a little woolly underneath; they are in shape like a lance-head, the length exceeding much the width and tapering from the base to the end. The leaves are without a leaf stem or that part of the leaf stem which separates them from the main stem or stock and sit right on the stalk. The edges of the leaves drop downwards below the point where they join the leaf stem, making projecting wings to the stem; the edges are scolloped or have a waving line. Along the centre part of the leaves, projecting wings set off. From the wavy edge of the leaf, spikes or thorns or bris-

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tles, which are rather short, are thrown out. The heads are small and numerous; in shape, a globe at the base, and before the flower opens, like a long egg at the top. The head is covered with scales which are lance-shaped, and some have the end tipped with a prickle or thorn, and are set closely against the head. The flowers are a pale purple, pinkish purple sometimes, but rarely whitish. The stalk is annual, growing and dying each year.

Such is the general appearance of the plant above the ground. It varies, occasionally, in some or even all of its parts according to influencing circumstances, but even then does not lose the least of its general character.

2. The root descends from the stalk perpendicularly from six inches to three feet and even more, varying with the soil. It throws out horizontal branch roots, which are one-fourth of an inch in diameter, and which run in every direction. If the main perpendicular root penetrates but a few inches, there will be but one set of branches going off horizontally at the bottom of the perpendicular root. If the perpendicular root descends a foot and more, parallel layers of branch roots will go off from the perpendicular one, at intervals of two to six inches. These horizontal roots extend in every direction. At intervals of a few inches eyes are set and from each one of these shoots are sent up to the surface, which above become main stems, bearing leaf and flowering branches. After the eyes on the main horizontal roots have sent up shoots that become main stems, the roots, at the points where these new main stems go up, commence to throw out a new set of horizontal shoots and thus each main stem, at its junction with the horizontal root, becomes the centre of radiation of new horizontal roots. The root is permanent and is never known to die.

Modes of Propagation.

These are two, first by the seed, and second by the root.

The thistle is first produced by seed; and its diffusion through wide regions is by seed; it is spread locally by its roots.

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Habits of the Canada Thistle.

The Canada Thistle will grow in any kind of soil that is not wet. It will not grow in swamps or wet lands, and it is *rarely* found in *very* sandy, gravelly, or peaty soils, but commonly in dry and loamy ones, and likes best rich clay loams and rich alluvial intervale or bottom lands. In the latter its growth and diffusion by the lateral roots, are wonderfully rapid, vigorous and exuberant. The richer the soil the greater the growth and extension. It grows in stony grounds and among rocks. Its habits show that it requires a soil that will furnish it with both the organic and inorganic constituents of plants in abundance. What constituents it draws, most largely, from the soil, could only be known by analysis; but probably it requires a combination of those necessary to grow the leguminous roots (as the carrot, parsnep, beet, &c.) and clover, corn and wheat; its root likens it somewhat to the leguminous plants and its stem, flowers and seed to the clover, wheat and corn. Wherever these will best grow, there the thistle will best grow.

The seed, like all those of the tribe of thistles, is covered with a *pappus*, aigrette, or down, which renders it so light that the least wind moves it. As soon as the seed is ripe it is easily detached from the flower head, and is constantly separated by the wind or any thing occasioning motion in the stems. The seed is thus readily diffused to great distances. If in flying it lights on streams it is carried down and deposited on the banks. If the seed falls on the ground of valleys whose streams flow, it is in floods carried on to the overflown grounds of the valley lower down, and is thus scattered through the whole extent of the valley. The seed is often, indeed always, in a region of country where much of the plant grows, deposited in the upland woods by the winds, and in the flowed wood-land of streams by water. It lies there dormant until the wood be cleared, when it springs up and occupies the surface before any other vegetation; the first year the whole space cleared will be covered with the thistle, at small distances apart, and the plant as yet small. In this stage it has not commenced to throw out its horizontal roots, is level with and close into the surface of the ground, and does not throw up a flowering and leaf stem; nor does it send up the stem until its lateral, ho-

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rizontal roots commence to grow. The plant the first year begins to extend its horizontal roots, and sends up a stem which does not ordinarily bear flower heads that year, but only leaves. In the latter part of the first summer the horizontal roots have extended far enough to throw up new stems from the eyes, to the surface, and what in the spring was a single stem, has surrounded itself with a greater or less number of fellow stalks. The plant has now developed itself and firmly established its position. The stalks and leaves all die in the autumn of the year with the cold. In the second year and ever after the plant produces flowers. After the flowers have ripened their seed, the stems producing flowers all die, leaving such stems as have not produced flowers and seed green until the cold weather kills them. In the extension of the plant by the horizontal roots, the roots grown one year will not produce in that year stems which bear flowers and seeds; in the second year they do. Thus in a patch or bed of thistles, the centre will produce flowering stems and the outer edges only leaves close to the ground, or at most small stems with only leaves on them; the *extreme* outer growth of the patch, will, however, be only leaves at the surface of the ground, and in character just like the plant when it first starts from the seed.

The most striking feature in the habits of the Canada thistle, is its immense power of propagation by its roots. Here lies the whole difficulty of its eradication. Tenacious of life to a degree that is not exceeded by any plant known, it resists all ordinary injury, and nothing short of unremitted assault can overcome its power of life. The capacity of the root to reproduce and extend itself is increased by an occasional severance of it. Any portion of it, however small, which possesses an eye or joint, will produce a new stalk and radiate new horizontal roots. The root when cut, will at all of the nearest eyes or joints, throw out from 1 to 3 new shoots which make that number of new additional stalks, and in turn double or treble the former number of roots. A single plowing or hoeing will always increase them, and very largely increase them in moist weather. The effect of severing the roots, on their power of reproduction and extension, will be in proportion to the nature of the soil. In a poor one, a single plowing will but moderately increase them, and if the weather be very dry perhaps not at all. In rich soils, even com-

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pact ones, the increase will be very marked; and in loose friable, alluvial ones, wonderful. A single hoeing or plowing seems positively to cultivate them and stimulate growth.

The stalk above the ground, if buried before flowering, in moist ground, will turn iself into root, and send out shoots that will become flowering stalks.

These are the great features of the habits of the plant. They constitute those peculiarities which must be known thoroughly, if the plant is to be attacked successfully and destroyed.

Experiments made in the Destruction of Canada Thistles.

In the years 1841, 1842 and 1843 the following experiments for the destruction of Canada thistles were made.

The thistles experimented on and effectually destroyed, occupied three kinds of soils. One was a strong clay loam, with some slate intermixed; a second, a reclaimed swamp, with a shallow upper soil, about six inches thick, of vegetable mould, alluvial deposit and clay, all resting on a hard pan or impenetrable subsoil; it had been occupied by surface root trees (those without a tap root); and the timber before clearing was principally black ash; and the third, was rich alluvial creek bottom soil.

On the slate clay, in April, the ground was plowed nine inches deep, and the plowing repeated monthly, until September, when wheat was sown. The thistles after the third plowing, never showed above the ground and have not since, now five years and more, appeared. The season was a very dry one.

On the reclaimed swamp, three plans were tried; 1st, a patch of three square rods was selected, and a fire of logs made over its whole surface. The ground was completely burned over and all vegetation destroyed. The upper soil seemed to be perfectly heated through to the hard pan and the hard pan itself in a measure affected by the fire on its upper part. 2d, a smaller patch than the last was selected adjoining, and after burning over, as in the last case, was thoroughly salted. 3d, on a third piece also adjoining of about two square rods, was applied at three different times

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strong brine, thoroughly soaking the soil down to the hard pan. In all three instances the thistles were perfectly destroyed. It was found before the experiments, that the roots of the thistles had not penetrated the hard pan. The three patches experimented on contained all the thistles in the field. The patch merely burned recovered soonest and has since continued to be the most fertile: that which was burned aud salted the next, and that only salted the least fertile; but even *that*, after the first season was more fertile than the adjacent part of the meadow not treated at all.

The third experiment was on the alluvial bottom of the creek. The land had been cleared in the winter of 1836 and immediately the trees were cut down, the thistles sprang up, on the opening of the next spring. The seeds had been scattered over the land by the creek freshets. It was found on examination, that the roots of the thistles penetrated the soil as low as the water in the ground which was about three feet under the surface, and was at the level of the surface of the creek. An acre was selected and plowed deeply six times in five months from April to August. But in the month of September the thistles were more vigorous than ever. The season was a very dry one. The next year, 1842, that same acre was planted with corn; plowed shallow and planted about the 20th of May, plowed and hoed in June, July and August and hoed in Sept, but in October the thistles were more vigorous than at any time before. Another patch of three or four square rods was selected and burned all over with log heaps. All vegetation appeared dead when the fire was done; but in a month the thistles were up through the burned ground as vigorous as ever, and for the whole season nothing of vegetation save the thistles was to be seen. Another patch of much the same size as the last, was burned over and salted three times thoroughly, but in a month the thistles flourished as if they had not been molested. Another like patch was salted and the salt destroyed the thistles on the surface, but in a month new shoots came up, grew vigorously and occupied all of the surface.

The season of 1842 was a moist one. Finding that these five methods, viz: plowing, hoeing and plowing, burning and salting, and salting alone, would not destroy the thistles on the bottom lands,

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it was deemed advisable to try the effect of a good grass sward. Accordingly the ground was sowed with red top grass seed and now, wherever the red top is established, the thistles are choked out and gone. They remain but in a few patches only, and those weak and fast disappearing as the sod advances. The green sward from red top was tried on upland, and it failed; timothy and clover were sown on the bottom lands, and they failed to destroy the thistles.

On the bottom lands the roots were so deep that the surface portion only was destroyed, and new shoots were again thrown up through the burned and salted portions. In the hoed and plowed portions the case was the same, except that the portions of root which were cut off by the plow and hoe, and got covered, did not die, but grew as well as if they had never been touched. The injury did not in any case, on the bottom lands reach the whole root of the thistle, and the plants recovered, and on the plowed and hoed portions the plants were increased in their growth.

In the experiment on the swamp portion, the root was reached to the very bottom and destroyed wholly. In the experiment on the clay loam with slate, the root was also reached to the bottom, and the season being dry, died entirely.

The red top grass on the bottom lands had a greater power of growth than the thistles, and choked the top of the thistle permanently, until the root died for want of light and respiration, or if it lives still, is dormant, and has been for more than two years entirely out of sight.

These experiments have been repeated every year up to, and including the last and with the same success. Experiments have been made in the destruction of the thistle on sandy loams, both by plowing and by sowing with clover, and success has attended them. The plowing more readily produced the result in the poorer sandy loams, not requiring to be repeated so often as in richer ones. The clover failed on the poor sandy loams, but succeeded on the rich ones; the growth on the former being too feeble, while on the latter it was vigorous, and covering the ground completely, did not permit the thistles to start after being well subdued by plowing and dragging.

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Deductions.

From a collation of what others have done, and from the experiments above detailed, the following conclusions may be deduced.

Whatever will effectually exclude the plant from the light and air will destroy it. This may be done by plowing, in some soils, and in others by a close grass sod. Plowing, if repeated frequently in soils, where the root does not descend beyond the reach of the plowing, will, in dry seasons, always destroy the thistle, and often in moist ones. In soils which are light, deep, rich, friable, and of course permeable to the air, and are in some measure always moist, plowing will always fail.

Wherever a dense sod can be formed, the thistle may be destroyed by seeding. The grasses wherever they are adapted to the purpose, will be found the easiest means of destruction; although not so rapid as plowing, hoeing, salting or burning, where these latter are available.

In all uplands, where the soil is of a depth admitting the root to be reached and affected in its whole extent by the plow, hoe, fire or salt, the thistle may be destroyed by these means, and they will be found the most rapid ones.

In all bottom lands where the root descends deep and the soil permits access of air, neither the plow, hoe, fire nor salt will destroy the thistle; here the grasses should be applied, and will be found the best destroyers.

Mowing will destroy those parts of the thistle which have thrown up flowering stalks; and will not in the least affect those which have not. Mowing should take place when the plant is in bloom.

Whatever limits the thorough application of the means of destruction, will proportionally diminish success. Hence it will be found difficult in very stony grounds, ever to eradicate the thistle; the plow cannot effectually reach its roots, and such ground is rarely a good grass bearer. Salt and sheep, with the scythe, will be found best for stony grounds. In grounds filled with stumps, where the soil is rich and will grow a dense sod, the grasses will be best, and in such the plow should not be used, as it will not effectually reach

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all the roots. Fences that obstruct the application of the plow or hoe should be removed.

If it be desirable to destroy the thistle by the grasses, it will be found best to make the land rich by manure. This will force the grass, and enable it more readily by vigorous growth, to kill the plant. And in the application of all remedies, care should be taken to reduce the soil by proper cultivation, to a fine tilth, that all the seeds of the thistle in the ground may germinate, and not lie dormant. The seed is very hardy, and escapes all the ordinary means of reaching the plant, except fire.

Precautionary advice.

In regions infested with the Canada thistle, when new lands are to be cleared, let the under brush and rubbish be cleared out and the ground sown to grass. When the grass has well taken root and a sod is formed, the trees may be cleared off and the thistle will not appear.

When the thistle first appears, attack it at once; it may then be easily destroyed. If neglected it will become a formidable enemy, and time and patience and much labor will be required to subdue it.

Conclusion.

If this essay shall induce even one farmer to attempt the eradication of the thistle, a good will be done by it; if it direct attention to the subject and stimulate to action, the object of the writer will be attained.

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EXPERIMENT FOR ERADICATING CANADA THISTLES.

Prize Essay, by Sereno E. Todd, Lake Ridge, Tompkins Co.

In order to eradicate the Canada thistle (*Cnicus arvensis*) *totally*, from my soil, so that it will never again appear on that soil, unless some seed or roots are placed there, and to eradicate it by the application of the least manual labor, and in the shortest period of time, and by incurring the loss of the use of the soil the shortest time, a knowledge of the *habits* of it, its *modes* of *propagating* and *of being propagated*, is indispensably necessary.

The Canada thistle is a perennial plant. It vegetates rapidly and matures its seed early in the season, and propagates thriftily on almost any soil. Its roots are exceedingly tenacious of life; so much so, that a piece of root, an inch in length, will produce a large stem. The large stems, when buried in the soil, if they are not detached from the root, will send up a great number of stems, which will all become large, and produce seed. But if they are separated from the root, they will decay as soon as a blade of corn.

The Canada thistle has but two modes of propagating itself, or of being propagated. One is *from the seed*, which it produces in abundance; and being attached to a downy pappus, they are hurled over the fields and high in the air, by every breeze of wind, and are precipitated to the ground during the falling of rain, or, by coming in contact with the twigs of the forest trees, and thereby being detached from their wings. Wherever they fall, if the soil is favorable, they immediately vegetate; if not, they will remain for years unchanged. By this means, all the woodland in this vicinity becomes seeded with the Canada thistles; and as soon as it is cleared,

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the seeds germinate, and take possession of the whole soil, if the prescriptions which I shall give are not adhered to, to prevent it.

The seed is carried many times by birds. And as they have the power of disgorging the contents of the stomach, when they please, they thus drop a great many seed in old rotten stumps, and in the dirt, where they are accustomed to roll. In all such places they are sure to vegetate.

The seed is carried many times with hay and grain into the barn. Afterward it finds its way into the manure and thence into the field. And as the germ is enveloped in a tough skin, I have known them to remain ten years in the soil, before they germinated.

The second mode of propagating is *by stolens*, which it sends out in all lateral directions. At the distance of every few inches, these stolens send up a new stem, and thus acquire new strength to push forward more rapidly, until every vegetable which is not more hardy than itself is completely eradicated from the soil. These stolens, or roots, have substance in themselves, like a potato, to send out shoots; therefore, by plowing them, cutting the roots to pieces only *occasionally* during the year, *assists* the growth, instead of effecting their eradication. In light and friable soils, they increase with amazing rapidity. Some school boys in this vicinity dug a root from the sand bank about *four rods in length*, with stems about every six inches.

As we have now noticed the *habits* and *modes* of *propagating*, I shall speak of my *modus operandi* for its extermination. And in the first place, it is important *to check its propagation*. When this is done, we have taken one very effectual step towards its total eradication.

I suffer none to go to seed; therefore, I check its propagation from the seed which would have grown on *my own* soil. But there are scores of miserable farmers who suffer acres of them to grow, from one year to another, unmolested; and by this means the timber land becomes seeded with Canada thistles; and as soon as the timber is cut off, and the rays of the sun warm the soil, we see Canada thistles springing up. But these plants, if cut off with a hoe

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before they send forth stolens, may be killed as easy as a corn plant. To prevent the seed germinating so quickly, on such land, two or three years before I design to cut off the timber, I sow grass seed in the woods at the rate of half a bushel to the acre. This will form a sward in which the seed will not so readily vegetate. (Perhaps some may think that grass seed will not grow in the woods; but let the faithless try it, and wait one year for the result.) Should any germinate on this sward, one clip with the hoe will use them up forever.

Wherever Canada thistles have taken possession of land, which I do not wish to plow at present, or on land which is filled with solid stumps, roots and stones, which cannot *all be plowed up deep*, I *mow* them close to the ground as soon in the season as they are high enough. I am fully satisfied, that it is far better to mow them when they are about six inches high, than to suffer them to remain until they are nearly ready to blossom. My reason, for this treatment, is plausible, I think. If the stems are permitted to get a great growth, the stolens will increase in proportion. But if the stem is kept down, the roots will discontinue to spread; and, therefore, the thistles are kept on a smaller compass of land. But if they are cut just before they blossom, the effect upon the root *immediately connected* with the large stem, is more fatal; whereas, the stolens, on the border of the patch of thistles, will suffer little or no injury, by the cutting of the parent stem; and will send up new stems, and push forward other stolens about as rapidly as if the old stems had not been cut. Now, by keeping the top or stem cut down *often*, the extension of the stolens is greatly retarded; and if the top is cut a few times close to the ground, the stolens cease *entirely* to grow. Experience has satisfied me, that once mowing in the former part of the season, checks its propagation by stolens, more than *two* mowings afterwards.

On such land, and in the nooks of fences, along stone walls, if the patches are small, I use the hoe to them.

It is an invariable principle in the animal kingdom, that nothing can long survive, if it is not permitted to breath the pure air; and it is no less true in the vegetable kingdom. No plant, whether *pe-*

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rennial, *biennial*, or *triennial*, can live long, if it is divested of its lungs. Now the leaves of the Canada thistle are the lungs. If, therefore, the top is cut off or smothered for a short time, the sap in the roots stagnates and they decay.

Cutting them with a hoe, or pulling them from the crevices of rocks, with the hands, by putting on leather mittens, I have never known to fail to eradicate *totally*, any patch of thistles, however inveterate, when the labor has been performed at proper intervals during the season. Any patch of thistles may be *entirely exterminated*, by cutting them with a hoe *four times in the season*; if care is taken to cut *every one*, a little below the surface of the soil. I have killed many patches with the hoe, by going over them *three times only;* and on the third time, but few were to be found. The intervals between the times of cutting should be neither too *long* or too *short*. The first cutting with a hoe, or pulling by hand, I perform before the stolens have started much; when the stem is about six inches in height. To cut or plow them once a week, will not be attended with as good success, as if the work were performed once in about *four* weeks. The reason for this is very obvious. When the Canada thistle commences growing in the spring of the year, it operates not dissimilar to a potato, exhausting the root to form the stem. And when the stem is about six or eight inches in height, the stolens commence growing. Then the root is partially exhausted of its substance; and being deprived of their lungs, nature makes another tax upon the substance of the roots, to produce new lungs; and if these stems be cut off again, in about four weeks, the old roots will be so much exhausted that they will turn black and commence decaying. They may, however, send up a few sickly stems; but if these are suffered to grow four weeks and then cut, the remainder of the roots will quickly decay. On the other hand, if the top is cut as soon as it appears, and cut again on its re-appearing, the root will remain, in a measure, unchanged through the season. But if suffered to *grow*, the substance of the roots, or their *vitality* is brought *above ground*, in the stem, and may be easily destroyed.

With all such small patches of thistles, I observe this rule; and by the observance of which, any patch of thistles may be *totally exterminated in one season.*

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I cut them with a hoe, below the surface of the ground, about the tenth of June. This labor should be thoroughly performed, as it gives them their "*death blow.*" The second cutting, about the tenth of July. The third, about the fifteenth of August. The interval between the second and third cutting, should be about one week longer. When I cut them the *third* time, if the thistles are in the sheep pasture, I sprinkle a little salt on the roots; and then the sheep will take care of any that may make their appearance. A watchful eye should be kept on these patches, lest some may have been overlooked. All such should be immediately cut up.

It not unfrequently happens, when I am harvesting wheat, or oats, that I find now and then a little thistle, just commenced growing, which has sprung from the seed that has been blown there from a kind neighbor's farm. At such times, however urgent my business may be, I stop my work as quick as I would to demolish a black snake, and with the blade of my jack-knife, or some other instrument, dig up this little pest. In this way, I find little difficulty in keeping my fields free from them.

In those fields where there are abundance of Canada thistles, and where there are no obstructions to prevent deep plowing, I commence the work of total and entire extermination, *after this mode*, which will never fail to exterminate the last vestige of *roots*, *stolms* and *seed*, should there be any.

The first step is to prepare the soil for a crop of corn. I prefer corn to any other hoed crop. If the ground where the thistles are, is a stiff sward, I plow *deep*, in September, (the deeper the better). In October harrow *thoroughly*, with a heavy harrow. If there is a clover sod on the ground, plow in October and harrow. In the following spring, plow, harrow and plant with corn, three feet apart each way. Plow the corn *thoroughly*, both ways twice, and hoe well. About five weeks after the last hoeing, I go through the corn, and cut up the thistles with a hoe. Should they become large enough again, let them be cut a second time. After the corn is removed in autumn, I level the corn row ridges with a two horse cultivator. This is to level the ground, so that, on the next season, the thistles will come up more evenly. Thus far we have not lost

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the use of the soil. The next season I let the sheep run in the corn stubble, as they are fond of the young thistle. About the tenth of June, I commence plowing the ground for summer fallow. *Plow deep*, and harrow. The tenth of July, commence crossing. If now there should be many lumps of dirt, I use the roller.

It is undoubtedly well known, that roots will not penetrate lumps of dirt; and if a grain of wheat, or even a Canada thistle seed, be placed in them, it will not vegetate. Therefore, my first object in rolling is, *to free any seed from those lumps*, that it may vegetate *then* and be destroyed. The second is, to prepare the soil better, for a crop of wheat. About the middle of August, if there is any seed in the soil, it will have germinated. Therefore, I cross plow the third time, which generally uses the Canada thistles, and all other nuisances, completely up. But to be certain, that the eradication is perfect, I plow again just before seeding. If the work has been done well, no Canada thistle will ever appear there again, unless some seed or roots are again placed there. I have tried several methods for the extermination of this pest of our country, and I have become fully persuaded that this is the only effectual one. The roots may all be killed in one season by plowing, but my object in working at them two seasons is, *to have all the seed vegetate*, when they can be easily destroyed.

When I came in possession of my farm, there was on it a piece of new ground, which had been just cleared. Canada thistles had taken possession of it, and had left one year's seed in the soil. I first planted it with corn, and the next season summer fallowed; and during both seasons the seed vegetated as thick as they could stand; but now, not a vestige of them remains. Had I destroyed them merely by hoeing, and seeded the land down, and not have given the seed a chance to germinate, I might have spent years in trying to exterminate them. But, by pursuing this method, keeping the soil mellow two seasons, every seed germinated, and was destroyed.

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PIGEON WEED, OR RED ROOT.

Sometimes called Steen Crout, Lithospermum, Stony Seed, Wheat Thief.

Prize Essay, by CHARLES M. STARK, Yates county.

It seems in this day and generation, that to make any subject interesting enough to gain attention, it must be shown that to practice it is a matter of pecuniary interest, and consequently in my effort to show the best method of destroying red root, I shall keep *this* interest of the farmer continually in view.

There can be no farmer in Yates county, that does not know that the average yield of the wheat crop is seriously lessened by the presence of this weed, and the expense of harvesting and threshing very materially increased by it. Just so far as this is true, time and money may be profitably expended in its destruction. Chemistry has demonstrated that grains of all kinds are made up of certain earths, salts, &c., and though in the growth of all plants a large proportion is taken from the atmosphere, still the minute particles which are taken from the soil in the formation of the stalk and grain must be present; for, if but one of the many parts necessary be absent, though there may be an abundance of all the others, failure is certain. It seems to be a peculiar characteristic of this weed, that it appropriates everything that it needs in the soil to perfect itself, without reference to anything else that may claim a share with it. When growing with wheat, if there be food enough for both, then both may be perfected; if not, the wheat must suffer. It is not so with the Canada thistle; this plant strikes its root to a great depth, and brings up food; and with the thistle there is a division of the spoils, and wheat is often larger in the midst of them, than where it is free from their presence. But this grasping, miserly weed, appropriates everything to itself, until, if wheat follow

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wheat for two or three successive crops, it remains in the entire possession of the soil. Thirty years since, red root was unknown in Yates county, and now, such is the small amount of successful effort against it, that hundreds of bushels of the seed are purchased at the Yates county oil mill, and if it were worth 8*s.* instead of 1*s.* 6*d.*, these hundreds would be thousands. It is very generally considered that the production of two and a half or three bushels of clover seed from an acre, after all the acknowledged benefit derived from the roots, is a heavy tax upon the soil. If this be true, how great an exhauster must pigeon weed be, with its roots penetrating but a little way beneath the surface, more than double the seed produced, and a hard woody stalk perfected. It may seem to some a waste of time and words to attempt to prove what may justly be considered an axiom, viz: that the presence of red root is "evil, only evil, and that continually;" yet it is my opinion that if we could, by a chemical analysis, see the hidden mysteries of this destructive plant, we should be surprised at the record of the amount it is stealing from us, and would look about for a way of escape from its blighting presence; and farther than this, the startling fact would be evident to us, that we must exterminate the nuisance, or see *it* exterminate our wheat crop.

When we take into consideration the fact, that it requires a united and continued effort to destroy it, (*united*, because if one farmer raises it, his neighbor *must*, as neither the gizzard of a fowl, nor the stomach of an ox can destroy its germinating power; *continued*, because it will lie in the ground for years,) we might almost despair of its destruction, were it not that despair is a word not found in the farmer's vocabulary.

There can be but one way to get rid of this wide spread and growing evil; and though we may theorize upon other subjects, this is, in agriculture, a matter of fact. We may in other cases, apply scientific knowledge, feeding one plant and starving another; but in respect to the weed under consideration, this is impossible, for when it has taken *all*, like the leech, its cry is still, "give, give." If a farmer wishes and *determines* (for wishing will not effect the object) to exterminate this plant, he must make up his mind to two things:

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first, never to sow any of the seed; secondly, never to allow any that is in the ground to arrive at maturity. This may be done by pulling up the weed while in blossom; mowing will not accomplish it, because it ripens its seed below the reach of the scythe. I will here remark, that I know of but three farms in Yates county, upon which this method can be fully and profitably practiced. Upon *these*, I believe, there is no red root, except that which is carried on by birds; (I speak of its being propagated in this way, not from absolute knowledge, but from the fact that it generally makes its appearance under the shade trees.) It is well known to all scientific and practical farmers, and I think, disputed by none, that a regular system of rotation is the only correct manner of farming; and I wish to show that by this very method, this weed can be subdued with more certainty and at a less cost than in any other way. The first thing to be considered, is the fact, that red root is a biennial plant, that will not germinate to any great extent in the spring, it being its nature to come up in autumn, and cannot therefore be eradicated without fall plowing. I would recommend the following practice: The first crop, wheat; the ground to be plowed but once, at least eight inches deep, which should be done in July, after which it should be thoroughly pulverized with a cultivator, to the depth of four inches. My reason for preparing the ground in this way, is this: the most of our land is seeded down after wheat, and of course receives its red root seeding at the same time, consequently a very large proportion of the seed lies near the surface. If this be turned under to the depth of eight inches, but a very small proportion will germinate, and the wheat will be to a certain extent free from its pernicious presence; if plowed twice, the seeds are mostly thrown back to the surface, which is admirably adapted to the increase of the pigeon weed, while once plowing is found to be at least as good, and I believe, decidedly better for the wheat. If it be possible, the red root should be pulled out of the wheat, but if the quantity be too great for this process, a more protracted effort must be made to destroy it. The wheat stubble should be plowed in the fall, just as deep as it was for the wheat, and well harrowed. In the spring, the ground may be plowed, (as shallow as possible,) but I deem it decidedly better to use the large cultivator with steel teeth, as not one spear can escape if it is thoroughly cultivated, and

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the ground will be in better order for the crop, which may be barley, oats, or spring wheat, but in my opinion, should be peas. The ground should be again plowed and harrowed in the fall. In the spring let the operation with the cultivator be repeated, and the ground planted to corn. If this be placed three feet apart each way, and tilled with a cultivator, no weed of any kind need be grown among it. This crop should be planted as early as the season will admit, to give time for another plowing in the fall, when the ground should be harrowed as before. In the spring, the same thorough use of the cultivator is necessary, and the land may be sown to barley, peas or oats, which must be decided by the crop raised the second year. If peas, then barley or oats may follow, but in no case should the same crop be grown in the rotation. I think it the better way to sow flax, for the seed, because I consider it as profitable as any other summer crop; and as the ground should now be seeded with timothy or clover. I believe flax is the best summer crop that grass seed can be sown with. Flax should be sown early; twelve quarts to the acre. I think this rotation must destroy the seed in the ground, as all that germinates in three successive years, dies, without the possibility of leaving seed. If any yet remains in the earth, the quantity must be so small that it may be easily pulled. We might now sing a requiem over departed pigeon weed, and read the burial service over red root, were it not that Phœnix like there is vitality in its very ashes. Though death and decay may surround it, yet in its stone tenement it is safe, and with patience it awaits the day of its resurrection, which will as surely come as the manure is removed from the barn-yard to the field.

The destruction of the seeds carried to the barn with the wheat is the most difficult part of the subject, and in order to effect it, no pigeon weed must go into the barn; for if it be carried there, it will be taken back again, and no system of rotation or anything else will ever subdue it. I feel very diffident about advising any farmer to burn his straw, but in this case, I think the benefit derived from the destruction of the seeds of this weed, would be at least an equivalent for the straw destroyed (or rather decomposed, for nothing *can* be destroyed). It is the decision of agricultural chemists, that a large proportion of wheat straw is taken from the atmosphere,

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and that every particle derived from the soil may be found in its ashes. As this has been proven by actual experiment, there can be no real loss by such a conflagration. The proper method is, to stack the wheat in the field, and as it is threshed burn the straw, on as small a space as possible, as all the heat that can be obtained from it is necessary to destroy the vitality of the seeds of the pigeon weed. I believe it would be profitable in many cases to mow the stubble and burn this also. The ashes should be gathered up and housed until they can be used in the compost heap, or otherwise returned to the soil. It may be thought that this system is too great a tax upon the land, there being no return made in manure; but this is a groundless objection; for any farmer, following the rotation, may apply artificial or barn-yard manure to either or all the crops raised, as his judgment may dictate. The soil will receive the manure made from the peas, oats, barley and corn, and clover seed may be sown with either of these crops, except the last, and the clover be plowed under in the fall (a practice, by the bye, I would by no means recommend).

The manure that has already accumulated in the barn-yard should be drawn out upon a sward, and the ground planted to corn, with the following rotation: 1st, corn; 2d, peas, barley or oats; 3d, flax; 4th, wheat. The pigeon weed should be pulled from the wheat, if possible; if not, the first rotation may be applied after the ground has lain two years in clover.

It should be borne in mind, that the presence of pigeon weed is a positive tax upon the farmer, and that every dollar successfully expended in its removal (to the full amount of this tax), is to him an absolute gain. I would remark, in conclusion, to the gentlemen of the committee, that I have not given a history of this plant, for the simple reason that I do not know it myself; and although I have looked through all the agricultural and botanical works within my reach, I have been unable to glean anything from them upon this subject, beyond the fact, that like many other things among us, *animal* as well as vegetable, the red root is a worthless exotic.

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NEW-YORK STATE AGRICULTURAL SOCIETY.

TREASURER'S REPORT.

January — 1847.

RECEIPTS.

1846.			
Jan'y.	Memberships, annual meeting, -----	137 00	
	Balance from Thomas Hillhouse, Tr.	546 21	
	William Buel, life membership, ----	50 00	
	Memberships, ----------	10 00	
	Mohawk bonds, dividend, ---------	105 00	
	Bond and mortgage, interest,-------	70 00	
	Auburn show,----------	4,333 17	
	Joseph Fellows, for Poultney Estate,	50 00	
	State payment, ----------	700 00	
	Mohawk bonds, dividend, --------	105 00	
	Transactions, sold,----------	5 00	
	Bond and mortgage, interest, ------	70 00	
			6,181 38

EXPENSES. — (A.)

Premiums.

1846.				
Jan'y.	To Lucius Warner, Carrots and Marygolds, ----------	1	$10	00
	" E. Rivenbergh, Winter Wheat,-	2	15	00
	" E. Dayton, Spring Wheat,-----	3	10	00
	" N. S. Wright, Barley, ---------	4	5	00
	" P. Crispel, Sewing Thread,-----	5	2	00
	" George Vail, Indian Corn,-----	6	15	00
	" S. W. Abbott, Kersey,---------	7	2	00

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Feb'y.	To J. J. Thomas, Essay, ----------	9	100	00
	" J. J. Thomas, Irrigation,-------	10	10	00
	" William Buel, Farm,----------	12	30	00
	" Mrs. Grove, from 1844, (potatoes,)	14	10	00
	" William French, Peas,---------	15	5	00
	" G. W. J. Bronson, Brooms, ----	19	2	00
	" Andw. Bush, Essay potato rot,-	20	20	00
	" S. B. Dudley, Winter Wheat, --	21	10	00
	" Hiram Mills, Barley,----------	22	10	00
	" Robert Eells, Spring Wheat, ---	23	15	00
	" E. J. Ayres, Oats, ----------	24	10	00
	" Thomas Lane, Pease,----------	25	10	00
	" B. R. Voorhees, Woolen Blankets,	27	3	00
	" S. B. Burchard, Sugar Beets,---	28	10	00
	" William Risley, Carrots,-------	29	10	00
	" E. C. Bliss, Flax, ----------	30	5	00
	" William Garbut, Farm,--------	31	20	00
July,	" H. P. Byram, Essay on Silk, ---	34	20	00
Sept.	" Willard Hawley & co. Silver ware	37	5	00
	" F. W. H., "	38	5	00
	" Franklin C. Morris, Poultry,----	39	3	00
	" Chester Gridley, Linen Stockings,	40	2	00
	" F. E. Thompson, Ottoman Cover,	41	3	00
	" Wm. C. Butler, Fancy Chair,---	42	3	00
	" G. Harbottle, " ---	43	1	00
	" C. Walcott, Hearth Rug, ------	44	3	00
	" L. C. Morris, Wax Work, -----	45	9	00
	" Eton Sheldon, Oxen and Steers,-	46	25	00
	" D. Collins, Carpet and Bed Quilt,	47	6	00
	" R. H. Hale, Stump Machine,---	48	10	00
	" Abby Allen, Worked Collar,----	49	2	00
	" C. A. Parsons, Agt., Stuffed quilt,	50	2	00
	" " Fire Screen,	51	5	00
	" " Bed Quilt,--	52	5	00
	" E. W. Danforth, Horse Yoke, --	53	3	00
	" Joseph Belcher, Silk,----------	54	10	00
	" H. Hubbard, White Quilt, -----	55	3	00
	" Benj. Hodge, Table Apples, ----	56	5	00
	" E. Fuller, Horse,----------	57	10	00
	" L .F. Allen, cattle, sheep & fowls,	58	23	00
	" N. S. Smith, Table Potatoes, ---	59	5	00
	" Charles M. Bronder, Cows,-----	60	10	00
	" E. T. Baldwin, Heifers, -------	61	5	00

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Sept.	To Wm. A. Dutcher, Needle-work, -	62	3	00
	" Harriet B. Cook, Embroidery,---	63	6	00
	" Saml. R. Osborne, Fowls,------	64	10	00
	" Mrs. J. Porter, Worsted Flowers,	65	3	00
	" Mrs. D. M. Colvin, Fire Screen and Ottomans,----------	66	8	00
	" Mrs. Lucas, Worsted Rug, -----	67	4	00
	" J. S. Wadsworth, Oxen steers, &c.	68	50	00
	" Mary A. J. Patty, Patch Quilt,--	69	2	00
	" Harriet A. Williams, Piano cover,	70	2	00
	" Joseph Barnes, Butter,--------	71	25	00
	" Mrs. Stephens, Ottoman Cover,--	72	3	00
	" Miss Greene, Child's Dress,-----	73	1	00
	" Alanson Bronson, Woolen shawl,	74	3	00
	" Joseph Beach, Stuffed Quilt,----	75	3	00
	" Timpkins Snow, Wax work,----	76	3	00
	" Arden Merrill, Gelding, -------	77	5	00
	" Joseph Mabbitt, Mare, --------	78	10	00
	" William Howard, Sows, -------	79	10	00
	" E. A. Howland, Breeding Mare,	80	5	00
	" E. Tayler, Refrigerator and bath,	81	5	00
	" D. A. Church, Breeding Mare, --	82	10	00
	" Wm. Van Hoasen, Sheep,------	83	8	00
	" B. Nettis, Horse, ----------	84	10	00
	" Noah M. Coburn, Cocoons,-----	85	10	00
	" L. C. Morris, Stockings and Bed Quilt, ----------	86	5	00
	" Ira Hopkins, Cows, ----------	87	15	00
	" Amos Lewis, Matched Horses, --	88	10	00
	" R. S. Ransom, Linen thread,----	89	4	00
	" J. B Nott, Mare, ----------	90	10	00
	" James Langster, Wood carving, -	91	5	00
	" Calvin Young, Fire Engine,----	92	5	00
	" Harvey White, Slide Gate,-----	93	3	00
	" Azariah Letts, Plowing match, -	94	12	00
	" David Cossett, " --	95	15	00
	" Hotchkiss & Smith, Hearth rug,-	96	5	00
	" G. Holley, Rag Carpet,-------	97	2	00
	" T. Ottley, Blankets and Flannel,	98	8	00
	" C. P. Nichol, Potatoes, -------	99	2	00
	" C. W. McCormick, Reaping machine, ----------	100	5	00
	" Allen & Carpenter, Buggy,-----	101	5	00

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Sept.	To B. Gauss, jr., Maple Sugar,	102	10	00
	" S. M. Brown, Blankets & Linen,	103	8	00
	" G. A. Mason, Devon Cattle,	104	10	00
	" T. B. Wakeman, Year'g Bull,	105	10	00
	" " Heifer,	106	10	00
	" " Sheep,	107	13	00
	" T. H. Hyatt, Cattle,	108	25	00
	" Edward Long, Horse,	109	10	00
	" O. C. Crocker, Butter,	110	15	00
	" J. Fairchild, Mare and Colt,	111	5	00
	" J. Boies, Fat cattle and steers,	112	35	00
	" H. Zalley, Horses,	113	5	00
	" John A. Gardine, Horse,	114	10	00
	" Wm. H. Sotham, Herefords,	115	35	00
	" " Sheep,	116	8	00
	" Edward Wells, Cattle,	117	10	00
	" Seth W. Holmes, Horse,	118	5	00
	" B. F. Hawkes, Bed Quilt,	119	3	00
	" H. N. Washburn, Cattle and sheep	120	45	00
	" R. Burritt, Lambs,	121	5	00
	" G. T. Oliphant, Fat cattle,	222	10	00
	" F. W. Collins, Fat Sheep,	123	10	00
	" P. Jones, Coverlet,	124	4	00
	" C. P. Nichols, Swine, and domestic manufacture,	125	13	00
	" Clark Avery, Silk and Flannel,	126	29	00
	" C. Britt, Coverlet and Kersey,	127	5	00
	" J. M. Sherwood, Cattle & Sheep,	128	33	00
	" S. Wilson, Creasing machine,	148	3	00
	" A. Hollister, Grey Mare,	150	5	00
	" Joseph Blakeslee, Sheep,	151	8	00
	" Price & Dana, Bell pulls,	152	5	00
	" G. W. Patterson, Embroidered table cover,	153	4	00
	" Aaron Colton, Bee hive,	154	5	00
	" Wm. R. Grinnell, Bull & Horse,	155	20	00
	" Margaret Jeffray, Diaper and Stockings,	156	6	00
Oct.	" Miss Abbott, Lace Veil,	160	3	00
	" J. F. Keeler, Hay Scales,	161	5	00
	" George Vail, Durham Cow,	162	15	00
	" J. M. Sherwood, Sheep,	163	8	00
	" H. N. Cary, Bull and Heifer,	165	20	00

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Oct.	To B. R. Norton, Gold Pens, ------	166	5 00		
	" Henry Willard, Fat Steers and plowing, ----------	167	15 00		
	" B. R. Voorhes, Carpet needle work, &c.,----------	169	9 00		
	" E. W. Bateman, Linen, -------	170	3 00		
	" Miss Davis, Portfolio, ---------	171	2 00		
	" R. M. Remington, Devon Bull,--	172	10 00		
	" Miss Van Buren, Needle work,--	173	3 00		
	" Moses Eames, Maple Sugar,----	175	5 00		
	" Albert L. White, Flannel,------	176	5 00		
	" Pierpoint Seymour, Sowing machine, ----------	177	5 00		
	" M. B. Converse, Turkies, ------	178	3 00		
Nov.	" Mrs. Hammond, Two Quilts, ---	179	4 00		
	" H. Otis, Steer, ----------	180	8 00		
	" Miss Atwood, Straw bonnet,----	181	5 00		
	" John H. Ladeu, Boot crimp,----	182	3 00		
	" Mrs. Millard Fillmore, Bell rope,	183	5 00		
	" F. Van Doorn, Imitation grain'g,	184	3 00		
	" L. C. Morris, Woolen stockings,-	185	2 00		
	" Isaac Hildreth, Seedling apple,--	188	3 00		
	" M. N. Priest, Broad cloth, -----	189	5 00		
	" Martin Smith, White flint wheat,	190	5 00		
	" Mrs. J. F.Stebbins, Fringe mittens,	191	1 00		
	" Rosanna C. Huston, worsted rug,	193	2 00		
	" E. R. Evans, Butter, ----------	194	25 00		
	" Wm. Ranney, Rag Carpet, -----	196	3 00		
	" Abm. Sherman, Turkies, -------	197	2 00		
	" Mrs. M. G. Pierce, Lamp Mat,--	198	3 00		
	" J. C. Hastings, Twelve apples,--	199	3 00		
					1,467 00
	" Printing diplomas, ----------	13	2 50		
	" S. S. Randall, Abstract Census,-	18	50 00		
	" James Hall, Geological Map,---	33	10 00		
	" John E. Gavit, Diplomas,------	168	12 60		
	" Robert Lovett, Medals,--------	187	53 00		
	" Robert Lovett, " --------	192	4 33		
					132 43
					$1,599 43

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(B.)

EXPENSES AT AUBURN.

To A. L. Johnson, Ticket office,----	130	18	25	
" John C. Newell, Printing, -----	131	24	00	
" Derby & Co., Sundries,--------	132	26	43	
" Whitbeck & Ireland, Ticket office	133	87	75	
" John F. Strain, Committee Clerk,	134	58	75	
" Oliphant & Co., Badges, &c.,---	135	56	00	
" Joseph Alleyn, Ass. Sec., ------	136	25	00	
" John P. Burgett, Clerk, --------	137	25	00	
" Watrous & Heyer, Sundries,----	138	11	25	
" Attendance, gates and floral hall,	139	125	75	
" Z. M. Mason, Crockery, -------	140	4	53	
" John Fargo, Lumber, &c.,------	141	5	74	
" Everts work on Floral Hall,----	142	31	21	
" A. Thompson, Floral Hall, -----	143	82	00	
" L. E. Carpenter, Carriages, ----	144	11	00	
" L. Ball, Floral Hall, ----------	145	7	50	
" J. C. Derby, Sundries,---------	146	129	16	
" A. P. Thompson, Ticket Office,--	158	6	00	
" D. Goodwin, Team for Dynamometer, ----------	159	3	75	
" Freight of Tent, ----------	164	1	75	
				710 82

(C.)

SALARIES TO OFFICERS.

Jan'y.	To Dr. D. Lee,----------	17	90	00	
June,	" J. B. Nott, on quarters salary, --	32	250	00	
July,	" E. H. Ireland, clerk to Treasurer, 1845, ----------	35	6	00	
	" J. B. Nott, on act. salary,------	129	100	00	
	" J. B. Nott, one quarter's salary,-	147	250	00	
	" Mr. Taylor, Secretary's clerk,---	195	10	00	
					706 00

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(D.)

EXPENSES, SUNDRIES.

To S. B. Hawley & Co., expenses at Utica,	8	5 00	
" L. McPherson, cleaning rooms,	11	1 00	
" E. H. Pease, sundries, 1844,	16	9 75	
" Recording Cooper's mortgage,	--	1 45	
" R. H. Pease, engraving, &c.,	26	86 00	
" A. Stevens, part payment tent,	36	32 50	
" Colman's Tour,	149	150 00	
" William M. Weeks, Tent,	157	123 75	
" Stone and Henly, Advertising,	174	1 38	
" C. Van Benthuysen, Printing and Binding,	186	179 59	
" Discount check upon B'k Auburn	---	8 17	
" Livingston & Wells, freight,	---	1 50	
" 79 days interest upon D. & N's. ass't. of Meech's mortgage,	---	30 62	
			630 71

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DR. *John McD. McIntyre, Treasurer New-York State Agricultural Society,* CR.

1847.			1847.		
Jan'y.	To balance from last report,	$546 21	Jan'y	By premiums paid, (A.)	$1,599 43
	" Memberships annual meeting,	137 00		" Expenses at Auburn, (B.)	710 81
	" William Buel, life membership,	50 00		" Salaries paid, (C.)	706 00
	" Memberships,	10 00		" Sundries, expenses, (D.)	630 71
	" Mohawk bonds,	105 00		" Bond and mortgage,	2,000 00
	" Interest on bond and mortgage,	70 00		" Balance on hand,	534 42
	" Receipts at Auburn Show,	4,333 17			
	" Joseph Fellows, Pultney estate,	50 00			
	" State payment,	700 00			
	" Mohawk bonds,	105 00			
	" Transactions sold,	5 00			
	" Interest on mortgage,	70 00			
		$6,181 38			$6,181 38

WE certify that we have carefully examined and compared the above account with the accompanying vouchers, and that the same is in all respects just and true

JOHN M. SHERWOOD, *President N. Y. State Agr. Society.*

LUTHER TUCKER, *Recording Secretary.*

Albany, January 19th, 1847.

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AGRICULTURAL MEETINGS.

Meetings have been held weekly during the session of the Legislature, for the discussion of subjects pertaining to Agriculture, and a desire has been expressed that a summary of the discussions should be published with the Transactions of the Society. We give in a condensed form several of the discussions which have been had the present session, and would gladly have published those of the preceding year, had they been furnished. We are indebted much to *W. H. Bogart, Esq.*, of Cayuga county, for the excellent reports, which he has furnished of the discussions.

February 11th, 1847.

PLOWING.

J. M. SHERWOOD, Esq., Ex President, Chairman.

Mr. JOHNSON, Secretary of the State Agricultural Society remarked, that it was gratifying to witness again, the commencement of Agricultural meetings, which had proved of so much benefit heretofore. The discussions which take place here are looked for with much interest throughout the State. He trusted, that farmers and other gentlemen in the Legislature, would sustain and give interest to these meetings, as they had done during the past winter, and he could not doubt that the results would be most salutary, and the information which would be furnished, of great importance to the Agricultural interests of the State.

The subject selected for this evening is *Plowing;* one of the most important branches of Agricultural labor, and on the right performance of which, in a great measure depends the success of the cultivation of the soil. He called upon Mr. HOWARD, associate editor of the Cultivator, to open the discussion.

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Mr. HOWARD observed, that the objects of plowing are 1st, to loosen the soil, for the purpose of forming a proper bed for the plants: 2d, To incorporate manures with the soil: 3d, Destroying the sod or sward, and so placing or arranging the soil and its ingredients, that the vegetable matters which contribute to the growth of plants, may be covered in a soluble state, and rendered available to their support when needed.

He thought *one* of the greatest, if not the greatest error in our plowing, was an attempt to accomplish too much by plowing too wide furrows. The injury from this cause was not as great on very loose soils, as on those of a more compact nature. That kind of plowing, however, which brought the soil nearest to the condition in which it was brought by the use of the spade, was considered the best; and this would be nearest accomplished by narrow furrows. He would not advise a greater width than from eight to ten inches.

The depth of furrows should depend on the nature of the soil, though the soil should be loosened in all cases to as great a depth as practical; but where the soil is thin and the substratum sterile and destitute of the elements which nourish vegetables, the loosening should be done by the subsoil plow, rather than to bury the surface soil to a great depth.

Mr. H. thought that plows of different construction were required for sward and for "old ground." For sward, a longer implement is preferable in order to lay over the furrow without its being broken. For "old ground" a plow that will break to pieces and completely pulverize the soil is wanted; hence it should have a shorter and more abrupt turn.

As to the time of plowing, Mr. H. was in favor of plowing sward after the vegetation has considerably started, as it would decompose sooner under such circumstances, and the gases seemed to be evolved in a manner most conducive to growing crops.

Hon. S. CHEEVER said, that deep or shallow plowing must, he thought, depend on circumstances. Whoever should adopt deep or shallow plowing as an invariable thing, would frequently find himself doing mischief. In the clays, particularly in the valley of the Hudson, where the under layers partake largely of lime, if heretofore plowed shallow, the depth should be increased either at once or gradually to 8 or 10 inches. The advantages of increasing the

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depth here were three fold. 1st, it brought up new fertilzing matter for the use of the plant; 2d, it furnished larger scope for the action of the roots downward, which not only gave them more capital to work upon, but was of great benefit in time of drought as they could then act beyond its reach; and 3d, deep plowing here relieves the surface from excess of water in case of heavy rains.

The same reasons should induce deep plowing in deep muck and loams, and in gravel particularly in disintegrated slates. But in sands, particularly those underlaid by an inert yellow earth, deep plowing he thought would injure the crop, and so generally of inert subsoils. To bring them up and mix them with the fertile soil above, was like mixing bran with flour to make it richer. The depth of plowing in any given case, calls for the exercise of good judgment and a knowledge of soils.

I have had no experience in subsoil plowing. That it is highly beneficial in clays and other tenacious subsoils, I have no doubt, particularly in level lands or those of slight declivity, it serves the purposes of underdraining. It would doubtless be useful for the same purpose in inert subsoils. A friend of mine told me, he had found the subsoil plow useful on his sands. There it had the contrary effect to under draining, which the porous state of the subsoil required. He said the subsoil in a natural state was full of little water courses, which passed off the water too soon, and the subsoil plow broke them up and formed a better medium to hold the water. I believe it is a fact known in engineering, that water will filter through a bank of gravel in a state of nature, where the same gravel broken up will make good puddle wall and becomes impervious.

I perfer plowing sod lands shallow, particularly when I plow in considerable vegetable matter. In the decomposition of this matter by the action of the rains and otherwise, much of the fertilizing matter goes downward, and I prefer to have it where the next plowing, which should be deeper, will bring it up again; whereas if turned to the bottom of the ultimate plowing, that part which descends on decomposition is not only lost to the present crop, but is never recovered.

For the same reasons I object to covering manures by deep plowing. I prefer spreading upon the top of the furrow and mixing with the drag or harrow. It may be well to plow in manure where we fallow for winter crops, or where we plow twice, but then I

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would plow shallow the first time and deeper the next, so as to bring up the fertilizing part of the manure with which it had parted downward. I would feed the roots of my plants, as I would feed my animals, by putting the feed within their reach.

I have found great benefit from plowing, particularly my sod lands, with a narrow furrow slice; the oftener the sod is cut through the better, the roots of the plants will set much the most in the seams of the sod. They break the prairies, for the sake of economy, with very wide furrows, say eighteen inches, and frequently plant corn in every other seam, or every third, in this way they get considerable crops; whereas by planting on the middle of the wide furrows the crop would fail. I have found great advantage in narrow plowing in sod of quack or couch grass, both in facility of cultivation and quantity of crop. I would almost as soon think of planting to raise a crop on a bull's hide, as on the back of a quack sod with wide furrows.

It has been remarked, that a plow may be used of different construction for stubble or stock ground from that to turn sod. That is so. On land without sod, the mould board may be set to a higher angle with the land side, and a wider furrow used, but care must be taken, not to raise the angle so high that the plow will not clear itself; for no plow will do perfect work that does not keep itself clear. The object of plowing is to break and pulverize the soil, and fit it to hold and sustain the roots of the plant. In some soils the plow fails to do this; for instance, in a tenacious soil partaking of clay. Here the harrow and roller should be used, the harrow to bring out the lumps and the roller to crush or break them down, and these implements should be used alternately until a perfect pulverization is produced. The best part of such soils is as likely to be in lumps after the plow as any of it; and these lumps, particularly after spring plowing will remain through the season, especially if a dry one, as impervious to the roots of the plant as a paving stone; and are not only lost in their fertilizing agency, but cover a space as cumberers of the ground. I have found the roller one of the most useful implements on my farm. I use it in pulverizing such soils as are inclined to a lumpy state, and to compress such as are very light, but I never use it on the tenacious soils as a last process, lest the compressed part should bake and form too hard a crust; but on the light soils there is no danger of that; I make a free use of it also upon my meadows, to the great convenience of the scythe.

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Hon. Mr. McGonegal of the Assembly (from Monroe co.) remarked, that he was not so much in the practice of speaking, as he was of plowing, and he could use the plow on his farm, much better than he could make speeches here. He was conceited enough, to think he knew *how to plow.* He was educated, as he had elsewhere remarked in a *log college.*

He held that plowing should not be deeper than five inches, as he did not wish his land plowed below where the roots of the plants would reach. If plowed deep it is injurious, mixing poor with good soil, and he conceives that the good soil is on the top. He formerly lived in Columbia county, where he practiced deep plowing, but always observed in plowing side hills there, when the furrow was shallower than on the level ground, he had always much the best crops. Mr. McG. remarked that shallow plowing had always given him good crops. He knew, however, that much was to be learnt on the subject of farming, and he was desirous of knowing all that could be learned.

Hon. Mr. Marks, of the Assembly, (from Greene county) said, that the gentleman who had opened the meeting had spoken of it as designed for the farmers of the Legislature—but he believed that he should be enabled to come in, as he had been put down on the list as both farmer and lawyer. Until he was twenty-one years of age he had followed the plow, and he believed that, "He that by the plow would thrive, must either hold himself or drive." He had in the last few years made several experiments in plowing, and from his experience he was satisfied that deep plowing was far the most useful, often producing a crop one-third at least larger than in former years, with shallow plowing.

Judge Buel, V. P. S. Soc. (from Monroe) said, he was rather surprised that Mr. McGonegal had located himself in a part of Monroe county so poor as to require plowing only five inches deep. The soil he was familiar with in Monroe was much of it five feet deep, and as rich as on the surface, and when thrown up and exposed to the atmosphere produced the very best of crops. He had 700 rods of ditches on his farm, in some places three feet deep, and the soil thrown out, produces as good grass, if not better than any portion of his farm.

Hon. Mr. Woodruff, of the Assembly (from Wyoming), remarked, that his experience was in favor of deep plowing. He had come

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into possession of a farm, where fields had been cultivated for sixteen years in succession, the crops were very poor, oats not exceeding two feet in height. He plowed this land, which was a gravelly loam and nearly level, from eight to ten inches deep, and sowed it with wheat and realized a small crop of only twelve bushels to the acre. He sowed it with clover, pastured it with sheep, and turned it under and sowed wheat again, and raised seventeen bushels per acre, and expects the next crop to realize twenty-five bushels. He considers deep plowing as decidedly the best.

Mr. JOHNSON remarked, that he considered *good plowing* as indispensable to successful farming. Without it the farmer looses in a greater or less degree the advantages he ought to derive from his land. In England this branch of farming is pursued with the utmost exactness. The furrows are uniformly, on their best managed farms, straight, of similar width and depth, often not varying in a field of twenty acres, an inch in width or depth. The furrow slice narrow, usually from 7 to 10 inches, with a lap furrow. The depth one-third less than the width. It is often asked, why all this nicety and care? The answer is, that by attending to these matters properly, the sod as it decays, does so equally, the land is made more uniform, the grain, when sowed, finds a soil equally pulverized, the seed vegetates at the same time, and the grain grows evenly, ripens together, and thus the farmer secures all the benefits good husbandry can give him.

It is said, we cannot afford to be so particular in our plowing. And why not! Will not the farmer be well repaid for his care and attention? I venture to affirm that he will be more than compensated for so doing. Although there are many practices in English farming that cannot be adopted here on account of the expense attending them; this is not of that number. This may be successfully and safely followed. If it was adopted, we should seldom see the struggle that is now too often witnessed, between the grain and the weeds, in which the latter not unfrequently prove the victors.

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February 18*th.*

PLOWING CONTINUED.

Wm. Buell, Esq., of Monroe co., vice-president in the chair.

The discussion was opened by B. P. Johnson, Esq., of Oneida county.

Mr. Johnson said, it had been stated at the last meeting, that he would at this time make some remarks on the agriculture of England, otherwise he would have preferred listening to the discussion of the subject before them. England to an American is replete with the greatest interest, especially if he views it for the first time —it being so entirely different from what he sees in his own country. It is essentially an old country; and you look in vain for the trees and stones and stumps so common in our farms, and in our country generally. Every thing in England is under the best cultivation; and the land is in the best condition for the farmer. The stone are all removed from the land, if we can suppose they ever were there. There is nothing to interfere with the prosecution of his plans. The manner in which the work is done differs essentially from the way of this country. The utmost care and precision, and neatness in every respect, is in their judgment the very best way to produce a great crop;—a kind Providence has given them the land, and the very utmost preparation for the furtherance of their crop, which they derive from it, alike their duty and their interest. English farming seems to have attained perfection, and yet they say it is but just begun—and they calculate on large advances; but how they are to do so, it is not easy to perceive.

In the spring of the year, there will be seen on the farm a large collection of females, some of mature age, and some of tender years —frequently in number twenty, thirty, or forty in a field—following some old men with *scuffle hoes*, cleaning out the rows for wheat. Almost every where is witnessed the nicest care in cultivation, such as would be given here to the finest garden bed ever seen among us; and this is general—both where the drill is used, as well as where the seed is sown broadcast—the same attention to extract every thing calculated in any degree to impede the healthful culture of the grain. He had found this very general, and in many fields which he saw, there was not to be seen a single weed. And when they are asked the reason of this extreme care and nicety, the answer is very readily given.

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They pay so much for their lands, their manure costs so much, it will be readily seen that there is a necessity for the cultivation of every part of their land. None of it is to be lost, if they would have any remuneration whatever for their labor; and we may well take into consideration, if the same perfect and systematic method is not the very best way for a good farmer in all places. The wages of females thus employed, are, of course, far lower than wages with us, and it cannot be expected that we should adopt such practices with the usual price of our grain crop.

But in the process of plowing, there is no reason why we should not do as well as in England. Their furrows are from eight to ten inches wide—seldom exceeding ten—very straight—made with the greatest nicety and precision—the slice is of the same thickness all the way through, so that the sod does not decompose quicker in one place than the other, and the soil becomes equally pulverized; nor does the grain start unequally, nor the farmer lose as with us, a third of his crop by its unequal growth. They plow with horses, usually form three to as many as six, in single file, with one or two drivers —sometimes very young lads at the plow. The use of horses, as with us, is evidently becoming more frequent. This work is done with perfect neatness and care—often the result of the labor and experience of years on the part of the plowman. In England, each individual does one piece of work, so that he understands it perfectly. There they have no such character as a man of all work. The plowman attends to that work alone. He goes to his work early in the morning and breaks off about two, and then has the charge of his team.

If any sods remain undecomposed, these females again appear with their baskets and gather them into heaps, when they are consumed, and the ashes scattered over the land. The roller and the crusher, the latter of which is very heavy, are freely used. The best cultivators distribute the seed by drills; and seed is saved by this, and the grain deposited and covered more uniformly—and the broadcast system seems on the retrograde.

There are few fences in England like ours—the scarcity of timber is a sufficient reason—the hedges are very neat, and very attractive in their appearance to a stranger. Some farmers there are who, like some in our own country, let things go at loose ends, but in the midst of so beautiful and finely cultivated lands, these exceptions make but a poor appearance.

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He had visited, with great satisfaction, the dairy districts of England, especially those of Cheshire and Worcestershire, our strongest competitors. One great principle pervaded them all. The first and second and last thing in the English dairy, was *neatness*. Every thing about them was neat, and nothing unsavory was allowed to be there. This extended to the care and keeping of the cattle, and he had seen many stables, where the cattle were kept with the utmost nicety. This was a principle with the English in the manufacture of butter and cheese, and it would be in vain for our farmers to seek there a market for these commodities, unless these excellent qualifications had a rigid compliance.

The salt they use appears to give them an advantage over us. It is chiefly the Liverpool and of the Ashton brand. This appears absolutely necessary for the preservation and preparation of their fine butter. Our farmers, many of them, are following this example, and are incurring the expense of procuring foreign salt, rather than buy our own at Salina. It is worthy of notice and of amendment, that the duty is yet so high on this article on its passage through our canals, as materially to enhance the cost to the farmer. At Binghamton the toll paid, amounts to *more* than the first cost of the article.

The great objection there to our butter, was, that it was salted too much. The English had seen but little of our good butter. Most had reached that country under the denomination of grease. Even with us, the proportion of salt is often so great, that with the butter we take in our mouths, comes a lump of undissolved salt. Such carelessness must forever destroy our hopes of a market in England.

The condition of their cattle is most admirable. They are fattened to perfection. They vary from eighteen months to three years; few being sold in market over three years of age. You may see often 5,000 fat cattle at once in the market at London, and out of the whole, there are every week immense numbers equal to the splendid specimens exhibited at our shows, such as would receive with us the first premium, and this not of one breed alone, but of several. The black cattle, Galloways and West Highlanders, may be said to stand at the head of the market, and command the highest price. The Herefords are next to the Scotch cattle, and are very fine animals. The Short Horns and Devons are also very choice and superior animals.

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There were three descriptions of the black cattle, which I saw. The Galloway, without horns, the West Highland, and the Runts, equal to either, though of a much smaller size. Similar cattle are common in Anglesea in Wales.

The sheep are enclosed in hurdles on the ground, and fed on turnips, vetches, clover, early grass, and whenever one part of a field is finished they are taken to the other, which, after they leave it, is plowed up and used for grain. They go to market by railway, and are in the finest condition. 30,000 of them arrive in London weekly. Go and look at the immense number, and you would suppose there was enough to feed all England. On Monday morning early, you will find them all paraded for sale, and when you go at 12 o'clock you will find them all gone, not one left, and next week the same scene will be presented. Of the different breeds, the Southdown may be considered among the best. There is a little Welsh sheep which is very popular. He had noticed them from the deck of the steamer in passing the coast of Wales, and they were as small apparently as lambs; and though the hills seemed almost bare of vegetation, yet small patches of pasture might be discerned, and by the aid of the telescope, paths by which the sheep finds its way from near the waves of the ocean to the top. These make the finest mutton in England. Then there are the Leicester and the Cotswold, and another black and white faced variety from Scotland, with long wool, which is a very superior sheep.

The condition of their laboring population is a very peculiar one, having striking features. He went among the laborers on a great many farms with perfect freedom. The name of America was every where a passport; and though it was then in the midst of the Oregon excitement, yet he did not hear, from high or low, rich or poor, any other feeling expressed towards America but the kindest. They all seemed to say, they would rather give up all the disputed land than have one day of war. Nothing but national pride would have ever led to difficulty. His only difficulty had been to get from place to place, such was the hospitality shown—such the anxiety manifested to hear all about America, that every where he received an English welcome.

All of them work, from the smallest child to the man of great age. They must all do so to live; for, except on some favored localities, where the landlords give liberal recompense, the wages of the

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best of them will not admit of their laying up more than about eighteen pence or two shillings sterling per week, when all were able to labor.

Many, very many, of them, would like to come out to America, but they cannot compass the means. They can save little or nothing by their wages. They are hopeless, and without ambition; and when he had asked some of them, having large families, as to what would be their fate, if sickness should overtake them, the answer has been: "The country will take care of me; *I* have nothing."

They must be educated before they can be elevated. This is the next great measure of reform which must take place. This subject will soon be considered in Parliament, for the cry is coming up from the people, "We must be educated." And whenever England shall see the universal people educated, many customs, though time-honored, will decay and crumble. The laboring population must be fed from the fountain of knowledge, and they will never submit to much that they now do.

The distinctions between the grades of society are marked and determined. The lower and the higher classes no more associate, than in our southern States do master and slave. The laborers begin to see that the real distinction between them and the higher classes, is that in the latter there is more education, greater intelligence; and why should they not also possess it?

Their food differs from ours chiefly in this—that the laboring population eat very little meat. Their breakfast is of coffee, bread, oatmeal, &c. In Ireland they are very fond of potatoes; but he very seldom saw them use meat, certainly not on week days; perhaps on the Sabbath they would have a little.

And yet they are almost universally healthy. He freely confessed that he had seen no finer looking set of men than were the English; and he credited the assertion that perhaps the finest looking race of men in the world were the English nobility. Their constant exercise out of doors contributed to make them remarkably healthy. Ale was universally used; used every where. On some farms it was used during the harvest time; and as a small addition to the wages of the laborer, a cup of ale, of greater or smaller size, was given.

Mr. Sotham here mentioned that they brewed it themselves.

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Mr. Johnson resumed. They did; they had the privilege of so doing, he believed, without excise duty.

He visited Ireland, which was a remarkably fertile country; more so even than England; and if agriculture was carried there to the same perfection which it has attained in England, Ireland could support itself from its own soil with perfect ease. He was there in August, when the potato plague had just made its appearance. In July, when he had before seen the fields, everything looked well, and every heart was filled with joy and gladness at the prospect. In three or four weeks the blight began, and there was exceeding distress in every part of the country.

No one can conceive how much the potato is planted. To every small cabin there is a potato patch. It appears to be almost their only subsistence. They raise a pig, sometimes some poultry, eggs, and now and then a cow; and out of all this they have to pay the landlord. So that their chief dependence for subsistence is on the potato.

In traveling from Dublin through Drogheda to Belfast, he had met many very fine farms, some as good as could be found in the entire kingdom of Great Britain, all in fine order and looking very beautifully.

The tenantry generally are in a very low condition. In this country we have no human beings who live as many of them do. The shanties on our canals, compared to their huts, are splendid edifices! An Irish hut is made of mud. Sometimes there is a hole in the top for the escape of the smoke, but in many instances the only ventilator is the door. Pig, cow and hens all live in the same domicil with the children. They sleep all together, and he had never seen, in examining these abodes, *any thing like a bed*. And yet they all appeared happy and contented. All made him free of their house, and all received him kindly. There were evidently warm hearts found there.

They inquired anxiously about their friends, but with rather a confused geography, sometimes as if New-Orleans and Wisconsin were very near neighbors. They had no idea whatever of the extent of our country. They think England and Ireland combined, the largest country in the world, and will not believe that there is any larger river than the Thames. He traveled from Drogheda in a jaunting car with an intelligent man, who made many inquiries about us, but who could not conceive of the great distances in our land.

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In Wales, he met a gentleman who occupied a station equivalent to one of our supervisors, very intelligent about all that concerned England, for hundreds of years back, but who knew nothing of our country; and when he (Mr. J.) told him that the voyage from Liverpool to New-York could be made about as quick as from New-York to New-Orleans, he said nothing, but stared, as if he thought—Here is a Yankee, and I must look out what he says; but when it was added that New-Orleans was on a river of three thousand miles in length (for it was believed best to be within bounds), his eyes expressed his opinion of my veracity, though he still said nothing. An English gentleman never contradicts, as is too often done in America. We may say, what they think, an outrageous assertion, but he never heard them say it is false, not even among themselves. To save his reputation, he (Mr. J.) thought he would resort to other weapons, so he asked the lady of the house if she had a Gazeteer, which fortunately she had, and produced it. It had a table giving in comparative lengths, the principal rivers in the world, where the Thames was laid down as a very small one, while there was positively not room enough on the map for the Mississippi; and when he saw that it was declared to be over *four* thousand miles in length, he looked as if he thought there was, at least, one Yankee who kept within the truth, and that my credit (said Mr. J.) was saved. I say this only to show how little is known of us.

I trust there will continue to be the intercourse between us of noble and generous hearts. There are among them many noble specimens of fine agriculturists, by whose wisdom we can profit. I trust we shall continue to receive them, so that this country may be made, as it can be, the garden of the world, as England now is, in regard to her agricultural condition.

Mr. William H. Sotham next addressed the meeting.

I have no wish to make any comparisons between the two countries, but I coincide with the opinion of Mr. Johnson, that England is the garden of the world. Her agriculture has been studied, and practiced by men of mind, and means, from which that country has derived vast and permanent improvement. They viewed it in its proper light, and by direction of that means, success was established. But America has the advantage over her. She has every facility within herself—a soil and climate capable of producing almost every thing therein consumed, and, as Mr. Johnson says, with a proper state of cultivation, is destined to be the greatest country in the world.

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I shall confine my remarks to the subject of plowing. My opinion is, that there can be no fixed rule, no regular standard for depth of plowing. A light, shallow soil cannot be plowed deep, but may be improved by the sub-soil plow, to loosen and break the lower stratum, and enable the roots of the crop to descend lower in search of their food. The stronger the root of the plant, the more capable it is of bringing its fruit to perfection, more especially in a root crop, the lower the tap root extends so much the more it increases its fibres; and the looser the soil, the more easily they spread to obtain nourishment for the support of the bulb, and gives that an opportunity to expand and improve the quality of the root; whereas, a compact soil, however rich, will not admit the tap root and fibres to feed upon that sustenance the land contains, and which ever root it grows, is small and of bad quality, stringy and hot flavor. Uniformity in plowing is very essential. The object should be to commence your land with a straight furrow and finish it with one; and by that means you are sure to obtain it. I consider a narrow furrow far preferable in nearly all instances. When plowing more than once, I should plow shallow the first time; second, a little deeper and a little wider; and if the third time, without manure, I should go still a little lower, if the surface would admit. The unstirred land below keeps your plow to its work, and aids you in maintaining uniformity. When manure is plowed in, it cannot be kept too near the surface. My opinion is, that none of the substances of the manure escapes from the soil by evaporation, when once deposited there, but is absorbed by the roots as it is dissolved by the rains; and in case there is an excess of more than the roots can consume, the inorganized matter receives it and stores it for them when needed. But if your land is subject to leach, and you plow in a heavy coat of manure, much of it would wash below the reach of the roots before it could be taken up by them to benefit the plants; for when once a dissolution has taken place, the substance will descend when there is a means of escape; and in this case, when your surface is impoverished, deep plowing will recover your *runaway* matter. I believe that sub-soil plowing is an injury to a clay soil, unless previously and thoroughly drained.

If you loosen an adhesive soil, you will soon perceive its injurious effects: it makes it more cold and wet than it was before; the rains penetrate, which would have previously soaked in gradually on the surface, been absorbed by the roots and dried up by the atmosphere, and by these means would have been disposed of. But in sub-soil plowing it would have descended below the sun and winds, and out of reach of the roots of plants, unless to check their course.

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The stirring of such soil gives a greater space to hold the water, and makes such land much colder. But if the summer should be sufficiently dry to absorb the water to that depth in the soil, then your sub-soil will settle together and become more stubborn than ever, probably more compact than if the sub-soil plow had been kept from it.

I have seen great advantage derived from trench plowing. For instance: Chadlington Downs in England was one of the most sterile soils that could be imagined; not impoverished from constant cropping, for it would scarcely carry a sheep to the acre. However, it was so barren that it laid to waste. The surface was adhesive, and particularly hard, so much so that few roots of the smaller vegetable kingdom could penetrate. The sub-soil was a porous, gravelly loam. T. B. Evans, Esq., owned a part of it, and, at a very heavy expense, trench plowed it—brought the sub-soil to the surface, buried the surface soil, and, by so reversing it, made it an excellent turnep soil. In a few years after this experiment it became noted for very heavy crops of turnips, barley, rye, grass and clover, wheat, vetches, and oats, and Chadlington Downs became as fertile as any light land in Oxfordshire. He kept a very heavy stock of sheep upon it, and a small portion of cattle, and no man must expect to keep up the strength of his soil without them.

Mr. McGonegal (from Monroe county,) said plowing was a business which he liked, for he had been brought up to it. He had followed it since he was ten years of age, and it would suit him best to take the plow handle rather than to take part in this discussion. He could draw straight furrows then, but he hoped if he drew crooked ones here, the gentleman whom he saw before him using the pen, would make them straight.

The opinions he held might be different from those of other gentlemen, but they are such as experience had taught him. He had not received them by tradition.

He took decided ground in favor of shallow plowing; and would prefer a depth of not over five inches, and shallower often. Judgment must be used, as much, perhaps, more in this than in other trades. It was the work of a lifetime. It was not in this as in others, when as soon as a man arrived at the age of 21 years, he thought all his trade was attained, but he (Mr. McG.) had been at his trade of farming over 56 years, and he did not think he had learned it thoroughly yet.

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He approved of the agricultural journals of the day ; nor was he afraid of book farming, as it was sometimes designated. Many opposed agricultural books, and said they were only written by lawyers, for money making business, but he cared very little for that, so long as the result of good information was there. He took the Genesee Farmer, and never found that he had lost anything by it, though some of the essays might have been written by lawyers. Mr. McG. enforced at some length his arguments made on the last evening in favor of shallow plowing.

Mr. Marks, of Greene county, and Mr. Fuller of Albany county, gave interesting details of their own practice in regard to the subject of discussion.

Dr. John B. Smith, (of the Assembly, from Monroe county,) did not know but it might be said, from his profession, that he was not one of those who ought to take part in the discussion of these meetings ; that none might speak of plowing, but those whose lot it was either to hold or drive. But, although agriculture was not his profession, yet since his residence in Western New-York, which was a period of sixteen years, he had gradually increased his agricultural operations, till he now raised a thousand bushels of wheat, and had done so for some years. It was well known, he might almost say, throughout the nation, what the soil of Monroe county was. In his immediate neighborhood, it was silicious mixed with some clay, and a large portion of disintegrated limestone.

He thought plowing, as a general rule, could not be too deep. The object of plowing was two-fold. First, to loosen the soil, and next to expose a new surface ; the latter of the most importance ; for each successive plowing that exposes new surface to the atmosphere, serves to combine it with the many fertilizing qualities that exist in that atmosphere ; qualities that serve for the nourishment of the vegetable world ; carbon, ammonia, nitrogen, and many others, which exercise so favorable an influence on the growth and life of the grain.

But, after all, the depth of plowing must be in accordance with the varying condition of the soil. It should be done when the soil is in right condition as to moisture. It should be just so dry as to leave it in a loose and friable condition. A suitable time, if practicable, ought to intervene between the different plowings so as to give

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as much opportunity as possible for the effect of the fertilizing influences.

I remember to have heard it remarked by Scotchmen, that in their preparation of the ground for the cultivation of flax, they considered the land richly benefitted by the plowing up to the ninth time; that they found their account in it, from the benefits received by the constant accession of new influences to the frequently disturbed earth. Deep plowing, as a general rule, appears to be the kind best adapted, from its producing such a looseness of the soil as to open it to all the benefits of the sun and air.

Those who are familiar with cities, must have noticed the surface of the earth under old buildings when it had not been disturbed for a long time, what a frosty look it has, from the salts that have, by the undisturbed condition for so long a period, accumulated upon it; and the illustration is evident in showing what an absorption of the elementary principles of the atmosphere takes place by the earth, and the importance of deep and thorough and frequent plowing, that all their good effects may be diffused through every particle of the soil.

It is said that over ninety out of the hundred parts of the element ary principles which enter into the growth of the wheat plant are derived directly or indirectly from the atmosphere, and from this it is evident that the earth should be so treated as to bring, if possible, all its particles within the influences of these principles.

As a further illustration, it will be observed that earth, when thrown up from a considerable depth, is at first sterile, and requires exposure for a length of time to the fertilizing influences of the atmosphere to obtain those properties which fit it for the growth of vegetables.

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February 25th.

AGRICULTURAL SCHOOLS.

The meeting was presided over by the Hon. Mr. BREKMAN, a former President of the Society.

The President announced that the subject for the evening was Agricultural Schools.

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Mr. B. P. JOHNSON had hoped that gentlemen from N. York would have been present, as was expected, but since they were not, he would say a few words in opening the discussion. It was a prevailing opinion among the farmers of our State, that as yet, the system of education which we enjoy in this State does not tend to prepare young men for their duties as farmers. Mr. J. reviewed the various defects which were prominent in the general system of education, and pointed out wherein they failed to minister to the wants of the great and powerful agricultural community, and as an example of what could be done, he alluded to the influence which Prof. Johnston's Agricultural Chemistry had exercised in the schools of Scotland, where it had been studied by the farmer's sons, by small boys, and on whose minds its principles, so clearly delineated, had made deep impression, and the results of which had been so satisfactory and so wonderful.

Professor JOHNSTON had submitted his scholars to the examination of learned men at Edinburgh—men of high literary reputation, but who had not much faith in his being able to imbue the minds of boys with the principles of agriculture—the whole theory of animal vegetation. They were somewhat inclined to believe it to be a humbug. But the Professor did what every good teacher should do, when he submits his school to an examination—he turned to his scientific visitors and told them, "these are my scholars—do what you will with them—ask them what questions you please." And they did so; and they took his book, and found to their utter astonishment the boys had the principles of agricultural chemistry fully imbedded in their minds; and that the scholars, in fact, knew more of the agricultural economy than they did themselves! It is no wonder that with such education to its farmers, Scotland is the flower of the Kingdom for beauty and perfectness of agriculture. The man who has charge of the farm belonging to England's queen, is a Scotchman, and though it was a subject of complaint, yet he was selected because he was the very best. Mr. Colman, in his Agricultural tour, bears witness to this, as all have who have visited Scotland.

They all speak of the process as triumphant—and these schools are multiplying, with books adapted to still higher improvements and studies.

They are beginning to understand this in New England. Yale and Harvard have called to their Halls two of our own sons. Men trained to this department of science, were taken from the Empire State to the bleak hills of New England. They ought to have been here

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—here in our own State—on our own soil—New England ought not to have been allowed to bear away NORTON and HORSFORD from among us. Our agricultural population must wake up to this, and see to it that in our own State there shall be facilities for the farmers here, to acquire the knowledge so interwoven with all the interests of agriculture.

Mr. J. went on to ask why it was that in this country the average product to the acre of wheat, was so small compared with that of England. By the census of 1845, it appeared that in our Western counties the average yield was only about 19½ bushels to the acre. And indeed in the other counties of the State it was but 14! And although the census might not have been entirely accurate, why was it, that in Monroe county, the very garden of our State, as regards the wheat crop, nineteen and a fraction bushels to the acre was the average. And yet in one instance in Ontario, the past season, a crop was found as high as 50.

Mr. COST, of Ontario, suggested that it was 59.

Mr. JOHNSON. It *was* 59. And it was stated in the transactions of a society of such high respectability as that of Ontario county, and yet large as this is, much larger crops are produced in England; and England is not more fertile by nature than our own State. It is the cultivation; it is the thorough, *intense* cultivation; the application of the knowledge of agriculture to its practice; the adaptation of the culture; the right kind of manure; a knowledge of its properties; the tillage; the drainage; all its departments. And who is there who will pretend to say that this State is not as fertile as England? All that is wanting is a knowledge of the right principles of cultivation. We have the land, and our seasons are favorable. There is no reason why we should not be rewarded with crops such as are the recompense of the labors of the English farmer.

Mr. J. spoke warmly of the ardent desire for knowledge in the young, and the opportunity to direct that desire to a right channel, which a well ordered school adapted to the spread of agricultural science would afford. It was demonstrated in the good effects produced by the circulation of agricultural publications. Wherever farmers take agricultural publications, they are found to be in favor of an increase of agricultural knowledge for themselves and their children. The knowledge thus gained is not left in theory, but gives an impulse to the farmer to go forward—to make further improvement—to bring about a practice which was ever calculated for good.

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Mr. HOWARD said he was in favor of the general plan of the establishment of Agricultural Schools, but at the same time the observation needed qualification—that is, he was in favor of establishing one on a plan of which he approved. He agreed with Mr. JOHNSON on their general utility, and that if properly established their usefulness would be decided. Whether it be best to establish a new institution, expressly for the purpose of giving an agricultural education —an education better adapted to the instruction of the farmer—or whether that principle should be engrafted on the institutions now in existence, are questions not now proper to decide. A few institutions are now in existence in which they are introduced. The Rensselaer Institute comes probably nearer to it than any other in this State. He supposed the particular plan contemplated in the resolution of the evening, intended some large institution, located in this State, aided and endowed by the funds of the State.

In connection with such a school, he considered that an important auxiliary would be a pattern or model farm, and he hoped that there was no contemplation of any such institution without this auxiliary. There new discoveries in agricultural science might be examined—their value ascertained—their worth tested. The experiments realized in the laboratory were often but imperfectly gained in the practice upon the farm. A model farm would be the place to remedy this. The ideas suggested by the skilful professor in his lecture—the theories put forth, could then be tested and their effect upon culture itself, as practically carried out, evinced. It was not by mere promulgation that a truth was established. It was only by repeated experiments and ascertained process, that facts became known, and had their reliable value. Mr. H. illustrated the position which he took, by reference, at some length, to many of the opposing theories of eminent foreign chemists—Boussingault, Liebig, and others, in their application of the science in which they were foremost, to agriculture—and pointed out their variance—and if eminent *savans* like them differed, how careful should the founders of such a school as was proposed be, that the knowledge gained there should be based as well upon the practice of the farmer as the excellent theory of any professor.

He thought that *facts* should be the great desiderata of agricultural schools—such as would do for texts from which the great agricultural community might draw instruction and usefulness.

Mr. H. sketched the history of some of the principal European establishments, and among the rest, that of Hofwyl, in Switzerland,

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founded by Fellenburg, whose success had been such that his pupils numbered about 400, from all parts of the world. There were the schools of Prussia, of England, of Scotland, and of Ireland also. In all these, the great feature was thoroughness, not mere theory, but a knowledge, as far as possible, a practical knowledge of every department of agriculture—such a knowledge as must be *the* characteristic of any good institution that might be founded here.

Mr. McGONEGAL said he knew more about practical farming than scientific farming, but he believed that great good might originate from agricultural schools—great good to the cause of agriculture. Farming was yet in its infancy. For many people farmed just so, because their fathers had done so, going right on in the old fashioned way. Some people thought that all that was necessary was, to use the plow and the hoe. Now he thought that he was no bad hand at the plow, he had used it long enough to use it well, but there *was* another thing that was useful, and that was *calculation.* Many times the land appeared in good state, and yet the crops were poor. Often the land appeared all wrong, and yet good crops were taken off it; and it would generally be found that the land had not been used or cultured as the particular circumstances required.

He had heard Dr. Lee's lectures at Rochester, and had experienced benefit from being present. He believed a school of the kind contemplated would often be of great benefit to farmers' sons just starting into life. He had been in every part of Monroe county, and had seen a variety of good and bad crops, but the rule held true, that where there had been proper and right cultivation, the crops had been most abundant.

Mr. McG. gave some statistics of the usual quantity of wheat raised on an average in his own county, and agreed with Mr. Johnson in the expression of opinion that it might be materially increased.

March 4th, 1847.

AGRICULTURAL SCHOOLS CONTINUED.

Hon. Mr. MARKS, of Greene, in the chair.

Mr. BURCHARD (of the Assembly) of Oneida, said he felt a delicacy in relation to this subject, as petitions in regard to it were before the committee of which he was a member. But he did desire to see

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it fully canvassed and discussed in all its bearings, for it was an interesting one. In Europe, there are many agricultural schools in a very flourishing condition. In France they have them of great celebrity, and also in Prussia. There is no doubt that such schools would succeed here, provided the plan was upon the basis of giving an enlarged practical education. Our colleges and academies now, though excellent to discipline and regulate the mind, are insufficient for giving practical education on many subjects interwoven with the pursuits of common life. For this purpose we need schools of a more professional character, which may also react beneficially upon the mind, for it is a maxim, old as the time of Galen, that a sound mind must be in a sound body. Agricultural industry conduces to health, and is, of all others, the most enduring in its good.

He alluded to the fact that many petitions had been presented to the Legislature on this subject, and hoped that from various points of the State, gentlemen interested in the different branches of agriculture, might give their opinions, so as to elicit all the information practicable in regard to it. He wanted an array of facts—he wanted to know who was prepared to invest their capital in such an institution, to give it life-blood—to give it countenance—else all plans and efforts would be in vain. Schools instituted on this plan must necessarily fail if there be *a want of patronage.* A friend of his from Madison county had established in Columbia county a school of manual labor, and what had been its success? Its walls stand on the banks of the Hudson as the old castles stand on the banks of the Rhine, desolate and unoccupied. Taking this view of the subject, it remains to be seen whether the agricultural interests of the great State of New-York are disposed to move—whether persons enlightened in all that concerns agriculture will invest capi- in such a school—else all will be in vain. It must be on a liberal scale, because, in this great State, there are schools of every description, in every nook and corner, where every different branch of education is taught. It would have to encounter multitudes of these schools. The competition would be too intense, and it might have a very feeble existence.

He thought the subject merited a careful and candid examination at our hands. As a member of the House he should, of course, preserve a strict neutrality.

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The president (Mr. Marks) here remarked that he believed the members of the Legislature who were present would like to have the views of those who were *not* members, as they were called on for action by numerous petitioners.

Mr. Howard suggested that although these weekly meetings were under the supervision, and by the proposal of the State society, the discussion was open to all, whether members of the State society or not.

Hon. Mr. Taylor (of Madison county) thought there ought to be an agricultural department in our academies. He thought this would be better than separate schools in different parts of the State, or one great school. The subject of agriculture had been too much neglected, but he hoped that the community would soon wake up to its importance. Our young men are taught in our schools every thing but agriculture, certainly not the least important branch for every young man to understand, whether he be a farmer or not. He wished that every academy which shared in the distribution of funds from the bounty of the State, did so on the condition that there should be an agricultural department established in it—separately organized, in all the schools receiving the public patronage. We need information on this subject—we need books. There are books written for our common schools and our higher schools, on all subjects except agriculture; but on this branch we had no books, or if published, their perusal is confined to few, and the reason is, because they are not found within our common schools—no elementary book or treatise on *this* subject. The idea of having an agricultural department in academies, had for some time been impressed on his mind. He knew it had proved successful, and Mr. T. referred to the academy at Homer, in the county of Cortland, where an agricultural department had been recently organized, as it should be in every academy in the State.

Mr. Johnson. How has it succeeded?

Mr. Taylor. Very well. It has been under the direction of Mr. Woolworth, an intelligent and competent man.

Hon. Mr. Tillinghast, of Herkimer. This whole State is an agricultural State, and although there are in it a variety of other interests, they stand on agriculture as the base; and thus it is highly important that this subject should be viewed with proper regard.

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On the subject of agricultural schools, he thought, the great body of the people uninformed as to their utility. Various experiments had been tried in connection with schools. Manual labor schools had been brought into existence, and had continued for some time, but with what result he was not advised. There had also been academies and high schools, especially in Oneida and Madison, with farms and workshops attached, where the students had been employed a portion of their time, partly to defray their expenses and partly to benefit their health. Some of the petitioners he believed asked for the establishment of a school near New-York. In such a school the first principles of agriculture might be imparted, but to give a thorough knowledge of all the departments, no one school will be sufficient. It would be an unwieldy and an enormously expensive plan. The different locations should embrace the different kinds of soil and labor. In the west, the grain culture; in other sections, the dairy and the grazing, the making of butter and cheese, would demand attention. Results only partial in their nature would ensue by confining the location to the vicinity of the city. But by placing the school where the knowledge of the particular kind of labor necessary to develop the resources of that particular locality, might be imparted, would be to give the plan a broader and better basis.

Dr. WARD, of Albany, said—The objection of the honorable gentleman who has just sat down to the establishment of an agricultural school, are based upon its inadequacy to meet the wants of the entire State; but, sir, the friends of the school *design* it should be what it is fitly termed, an *experimental* school—one in which the application of the sciences to practical agriculture shall be taught, and the superiority of a system guided by fixed laws, shall be demonstrated by experiment, to be superior to the old system of trial and error.

I do not appear as the advocate of the particular bill to which allusion has been made, but to avow myself the friend of agricultural schools—and state what I believe will be gained by their establishment, and if the experiment can once be fairly made—be it either in the vicinity of New-York city, or in western New-York, instead of *one* we shall soon need a score, to meet the wants of the empire State.

I believe they will elevate the intellectual character of agricultural pursuits, and constitute that a *professional* occupation, which has hitherto been regarded an *unlettered, servile* and imitative art. And

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the fifty farmers in our Legislature, owe it to themselves, and to their constituents, the majority of whom are cultivators of the soil, to give their united influence to aid in elevating their occupation to a rank as honorable as the learned professions. In giving utterance to such a sentiment, I would not disparage those professions—I love my own too well—having devoted to it twenty years—the best of my life—I honor the profession of the law, while the very name of the other commands respect in every enlightened community. But, sir, tell me if you can, which of these professions, or what other occupation in life requires for its successful prosecution the possession of as diverse and extensive knowledge as that of agriculture.

To obtain the highest reward for agricultural labor, the agriculturist should be acquainted with the constituent properties of the soil, its organic and inorganic or mineral elements—the nature and constituent principles of the plants grown—and also the character and constituent principles of different manures, and how to adapt or administer them to the growing plants, for plants need food as well as man or animals, and grow, too, in virtue of that food on which they feed, and will no more grow vigorously, unless their food is adapted to their condition and wants, than will man or animals. A knowledge of vegetable physiology will not only teach him what food is best adapted to the growing plant—the form in which it can be most readily taken up by the spongioles, but also the stage in the progress of its growth between its germination and its full development, in which its influence will be most fully exerted in the production of a perfect plant.

When vegetable physiology has acquainted him with the peculiar functions of different plants, a knowledge of chemistry will discover to him what gases are absorbed from the atmosphere through the leaves, and what mineral elements from the soil through the roots, in their progress of growth; and if the soil lacks the mineral elements that enter into the composition of the plant, a judicious selection of manures will furnish him the lacking material. If the *phosphates*, or alkalies, or silica, enter largely into the plant to be grown, he must see, if he would be adequately rewarded for his labor, that the respective substances are in the soil, for the plant can no more generate a mineral element than it can create itself.

Again, as the farm is to be stocked with domestic animals, over whom the Creator has given man the dominion, to aid the farmer in the tilling of the soil, in conveying the products of the earth to the

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granary, and from thence to the market, he should have some knowledge of veterinary anatomy, that he may study their diseases. To the horse and the cow, particularly, we owe a vast debt of obligation for services which they have rendered us—they live for our benefit—ask nothing for their services but food and shelter, and those of the coarsest and cheapest kind; and hence justice as well as humanity demand that we should acquaint ourselves with their diseases, that we may know how to administer to their relief when suffering. Since there are some kinds of food particularly adapted to form muscle—others to increase the deposit of fat, while others increase the secretion of milk, we should study their dietetic and physiological habits. But the agriculturist should not only be a *geologist*, a practical *chemist*, and a physiologist; he should also be acquainted with natural history. At a moment when the enlightened agriculturist, with a perfect knowledge of the composition of his soils, the structure and functions of the vegetables and grains which he cultivates, and is rejoicing in the prospect of reaping an abundant harvest, he finds his hopes suddenly blasted—his crop, the development of which he has so carefully watched and nurtured, from the germination of the seed up almost to the time it would be ready for the sickle, becomes the prey of some devastating insect. In order, therefore, to protect his crops from its ravages, he must learn its species, acquaint himself with its habits, know its transformations, for what will prove effective to its destruction in one stage of its transformation may altogether fail in another, hence he should be an entomologist. And so we might go through all the different branches of the natural sciences, and show their relation to agricultural employments.

The influence of the sun, the source of heat, the most efficient agent in the process of vegetation—the influence of the moon, too, on the germination of seeds—the prevalence of winds—storms—the falling of dews, frosts, &c., all afford fruitful topics of thought and study, which may be turned to profit by the enlightened agriculturist. It has been well said "all the world was simply nature when God created it; and natural history, in its widest meaning, is the history of that world of nature, and therefore, ignorance of natural history is ignorance of God's world, which presents the most sublime and useful study man can pursue." We have too long regarded the business of the farmer as that of a routineist, adjudging him the best, who most fully imitated or excelled the father in *his imitative* art, never for a moment thinking that the vegetable world was governed by laws as fixed and determinate as the natural or the moral—and

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that every creature and all objects, whether animate or inanimate, were sustained in being and governed by laws known and demonstrable, so that not even an apple can fall to the ground unguided by those laws—yet, in our practices, have we acted out the belief that God had left the vegetable creation the sport of chance and circumstances.

We want, then, agricultural schools, where a knowledge of these laws, and scientific principles that have been developed by men of science, shall be taught in their application to agriculture by *practical* agriculturists.

I trust, sir, science has but just begun to shed its light on this subject; that we are now enjoying but the twilight of morning; a morning that gives promise of a glorious day; and when she shall have accomplished for agriculture, the most *benificent*, and declared by the father of our country the most *noble employment* of man, what she has done for the other arts, the occupation of the farmer will not be regarded as less honorable than either of the learned professions.

Hon. Mr. TAYLOR, from Madison county, thought that in our higher schools, as now organized, the discoveries and aids of science were made harmonious with all other professions, except that of agriculture—while many of the sciences, such as chemistry and geology, best illustrated that one, above all others. It is only lately suggested in academies and colleges, that science can be thus united to agriculture. In looking at this great agricultural State, his only wonder was, that there could be any doubt upon the propriety of action. Such a school should be a State institution—patronized by the State. Its location was not now a question to be particularly discussed, but it should be at such a pointas would best accommodate most of the citizens. He was, however, against locating it near the city of New-York.

Mr. CHEEVER said he came to hear, not to talk. That a State institution, properly got up, would be of immense benefit, not only to the agricultural interest, but to the other interests of the State, he did not doubt. An institution which would answer the purpose, must be on an extended plan, for agriculture in its various departments is an extensive business. There should be a pretty large tract of land, and it ought to be good land—and the expenses in the incipient stages would necessarily be large. Our agriculture is

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to feed the human family to a great extent, and to prepare the food for the domestic animal also. We want land for extensive sheep walks—for the improvement and breeding of all descriptions of farm animals. We want to experiment on the improvement of the different descriptions of sheep introduced in our country—the finer for their wools and fleeces—the coarser for their carcases—the mixed for both—the best system of propagation—the increase of size and the quality of wool, weight and limb.

And so in regard to our herds of cattle, as to what are the best breeds—to have examinations made in reference to breeding as well for the meat market as the dairies. The horse too, is an important animal, among the necessaries and luxuries of life, and his breeding, propagation, rearing and improving should be attended to. Then that great article of human subsistence, pork, the breeding of swine would demand in such an institution particular attention—the selection of stocks and the best method of breeding.

To subsist all these animals—to attend to the grasses which are to form the food of the flocks and herds, the hay, the pasturing, the best system of meadows, the tillage, the seeding necessary to keep up these pastures, what kind of manures, and their effects and the cause of their effects; and then in reference to the *cereal* part of agriculture, the grains, the best system of raising wheat, Indian corn, rye, barley, oats, and last, though not by any means the least, the potato—all these will form part of the teachings of such an institution.

To accomplish this, the farm *must* be on an extensive scale—one embracing a great variety of soil. It must be a school to teach men from all parts of the State.

Mr. C. doubted some whether the preferable location would be in the vicinity of New-York, as the great cost of the lands near that city would at the outset render necessary such an expenditure as might forbid the success of the project.

An institution, whose lands should be well located, whose professors and teachers should be well selected, he believed would result in immense benefit. But the question for the Legislature to ask, before they enter upon it is—*Will it be supported?*

(A Voice. That is it.)

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Mr. C. continued. Who will support it? We are told that our mercantile men in our cities, where they have accumulated wealth, desirous to draw their sons from the hazards of trade which they have realised, and from the temptations of city life, that *they* will send their sons to fit them to be cultivators of the soil. If the State could be insured that it *would* be so, and that a sufficient patronage could be at once extended to it, it might settle the question. Its results to them would without doubt be of the very best character, as it would convert those into useful men whose lives might other wise have resulted in a very different manner. Would our agriculturists send their sons? This is another question. Our more opulent, forehanded farmers might; and Mr. C. spoke of the advantages which, if patronage *was* extended, would flow from such an institution.

Mr. C. hoped that a nucleus might be formed, out of which a great institution might grow, and alluded to the fact that of all our best endowed colleges, there were none that had been brought into existence by the State, but by individual effort, association and enterprise, which had given them foundation, and encouraged and strengthened them till the State had come in with its fostering aid, and success had followed. Individual association and individual enterprise should begin the work.

Mr. J. B. Howard said, there had been departments of agriculture in academies, calculated to give an agricultural education, but there was no agriculturists there. There had been geologists and chemists, but no agriculturists, no farmers there. If a farming education was to be given, it must be by farmers, not by geologists and chemists. It must be done on the farm, not within the walls of a school room. He thought it would be unwise for the Legislature to grant the aid required, until the plan was fully laid before them and approved. Heretofore many had been commenced without a proper plan, and without proper teachers; and they had proved abortions. There had been so many failures that the public had become distrustful.

To elevate agricultural education, the common school must be leavened with it. What could one school do to educate the hundreds of thousands that form our farming population? Some more general plan should be devised—something on a broader and more durable basis than those which have heretofore been formed.

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Mr. S. Howard thought the necessity of having a plan fully matured and understood was obvious. It was the wise remark of Franklin to his nephew, that in whatever he did there should be a *plan*. The causes of failure had been, in the intrinsic defects in organization. But the time would come when a good plan would be matured, and success, eminent success, would attend the enterprise as it had in other countries. It was true that it was an experiment, for it must necessarily be so—for in such a school it must be by the trial of experiments that truths are elicited.

He looked on the system of education as like to the solar system. It was necessary that there should be one great light, around which the others should revolve, and so in the great science of agriculture, one institution on a large scale, where the varieties of soil could be tested, and all the elaborate experiments fully tested, would do much, very much, to elicit facts, to bring out truths and to disseminate knowledge, which might be made available in every other lesser school.

The qualifications necessary for the management of such a school are rarer than are at first imagined. They embrace the whole variety of agricultural knowledge, the test of soils, the value of breeds of animals, Durhams, Herefords, Devons, and every other class and variety. The operations of the school would be a work of years. One fact established, one truth elicited, one theory reduced to practice would lead to others, one landmark gained would point to another. There would be no great and sudden revolution, but step by step the results of truth would make themselves manifest, till at last would be accumulated a vast mass of important information. Lecturers and theorists had wrought great injury by predicting sudden revolutions in agricultural practice in a day. Their fine spun theories had faded as soon as uttered. It had proved to be not all gold that glistened. In a large establishment, all this could be rectified, the truth could by patient investigation be arrived at, and the theories tested; and such, and such only, as stood the ordeal, could be held fast as good.

Mr. BECKWITH stated that it appeared to him that to sustain with success, to continue and sustain such an institution, must not depend on the people of the country. Where there were very large landed estates, and wealthy landed proprietors, it might operate well. Where young men with handsome education go upon large farms, they generally improve them by men whom they hire, and they might very usefully attend such a school. But in the country, we are dif-

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ferently situated. If the State should build up a large school of the kind mentioned by the gentlemen who have spoken, wealthy men would send their sons for its benefits, if they intended that they should follow agriculture, and if the plan of having such an institution conducted by men of great celebrity should be carried out, doubtless they would derive great improvement.

In the case of the professions, each one cultivates the talent which the God of nature has bestowed, and he pushes ahead out of the reach of common men, just as his talents and capacity give him the power. Equal talent gives equality, and greater gives superiority. This talent is all the capital for a professional man, and poor and rich may have it alike, but from the agricultural school the rich man's son goes out to cultivate, by the labor and help of others, a large farm, and the poor man's son comes thence to be hired by the rich man, and to be a hired man after all.

Why how have our people progressed in their agricultural interests? They have done it without the aid of schools. They have done it by the energy peculiar to the American character. These results have not been brought about by the sons of the wealthy. In the professions, it is education against education—and that is the capital which poor and rich alike have; but from the agricultural school, after spending many a long year of valuable time there, the rich man's son would go out, to see the experiments carried on on his large farm, and use his agricultural knowledge in overseeing others, while the poor man's son would go out to labor for him. The results are not equal, for they would not start equal—and there would be the trouble.

Mr. B. supposed that five thousand dollars would be about the average capital of the farmers of our State—the prosperous middle class of farmers—and in the family usually around them, this would probably meet a division of five, or about a thousand dollars to each child. He thought it far better that those children should be at the common school, or at the academy, where, as in Scotland, chemistry and other elements of an agricultural education might be taught—where they could attend, whenever in winter or summer they could be spared. His patrimony might give him sufficient to start on, and his education would go on, while he was clearing the forest and pushing onward. It had been so, and would be. This would be better than attendance on an agricultural school.

He doubted whether at present the funds of the State made it expedient to entertain the project of purchasing a large farm, and the

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other expenditures necessary to sustain it. Let individual enterprise, if this school is needed, begin it, and hereafter the aid of the State might be successfully invoked.

Mr. JOHNSON hoped, that although this was the *first* time that they had heard from his venerable friend, the chairman of the agricultural committee, it might not be the *last*. He hoped often to hear from him ; but he could not but remark to his friend, that in Scotland, the best agricultural country perhaps in the world, the tables were completely turned. There it is the middle classes and tenant farmers who advocate and sustain these schools. It is these men who mainly raise the funds necessary to send Professor Johnston throughout the entire kingdom to elicit all obtainable agricultural information, though many of the landlords aid them in their noble work.

Mr. SOTHAM suspected that the true reason of the want of success was that the farmers had never been in such a school. Geologists and chemists had been, and had built their castles in the air—had talked about the nutriment derived from the air, and had overlooked the education that comes from the spade—the shovel—the hoe and the dung fork, and had begun to teach terms which not one man in a thousand could understand—all full of theories, which, attempted in practice, fail, and disgust supervenes at the failure. Mr. S. here gave some ludicrous illustrations of the absurdity into which lecturers had fallen, by substituting a book-learned theory for a practised-taught fact. It was the soil to which attention should be given. Thence was it, that the life and vigor of the plant was derived. As in professional life, one physician imparts lessons to each other—one lawyer teaches another—so in a school for farming, it should be by a farmer that the instruction should be communicated.

Mr. JOHNSON here remarked, that with the plan of a college at or near New-York, the State Agricultural society had nothing to do. They only desired to see the subject fairly and fully discussed. The friends of that project would doubtless spread its merits before the Legislature and the people, and he expected to have heard from them at this time. What the State Society hoped for, was, an agricultural educational system widely diffused all over the State ; and whatever system was best, that they were anxious to have adopted.

Mr. HOWARD, in allusion to a remark made by Mr. Beckwith, stated the fact that among the small farmers in the north part of Ire-

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land, men tilling only from ten to forty acres, there were agricultural schools, attended by boys from 10 to 14—and well sustained—where the principles of agriculture are thoroughly taught—evidencing that even among small farmers the acquisition of learning is not despised. Certainly if agricultural knowledge is beneficial to farmers in the north of Ireland, why would it not be to the farmers in the State of New-York ?

Mr. Beckwith disclaimed having intended to say that knowledge was injurious to the farmer. He thought the best way was, to introduce it in the common schools and in the academies. Pope's adage of "a little learning, &c.," does not apply to us here. He had no belief that that great man would ever have applied it to us in this land. He wrote for a far different age.

Mr. McGonegal eulogised farming as a science, to which the aid of education was always beneficial, whether conferred on rich or poor, and, as in mercantile life, the experienced clerk receives higher compensation than does the ignorant one, so would the farmer, skilled and instructed, at once be the recipient of higher wages, if he labored for others, than he could receive who had not exerted himself to learn the various branches of agricultural knowledge. It was only within a few years that it had been thought that farming was a science. It was thought that all that was necessary for the cultivation of the earth was to hold the plow, to use the axe, to swing the scythe ; but a different and a better judgment was entertained now.

Agricultural education made the rich man better able to judge of the best tillage and cultivation of his land. It enabled him to calculate better as to the working of his farm. It was good for all classes. An agricultural school would be profitable to all classes of the people. In the culture of grain, especially, it was now seen what caused the difference between the good crop and the imperfect or defective one. It was the culture, produced by the knowledge of how to cultivate; and the crop which this year is twenty bushels to the acre, may, by better cultivation the next harvest, be made to yield forty.

He did not regard the vicinity of New-York as the best location for the proposed institution. Among other reasons, he instanced the effects of the air from the salt water upon the land, and alluded to the difference between the results of the application of plaster to the land in that region and its beneficial effects at the west.

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Mr. TAYLOR, (of the geological rooms,) alluded to the fact that in former ages the tilling of the soil had been regarded as a servile employment, and they who pursued it were designated as slaves and serfs. So it was for centuries, and indeed only within the last halt century has that odium been removed. The spread of intelligence, the advance of science, the application of science to agriculture, has made a better order of things apparent.

He did not doubt the success of an agricultural school, where the great object pursued was the development of truths by experiments, establishing scientific facts. Such schools were already in existence.

Mr. T. regretted the lateness of the hour, which prevented his laying before the meeting some very interesting extracts confirming this view of the question. He read from the Cultivator for February, 1846, 2d series, page 41, a very valuable letter, illustrating the benefit of such schools.

Scotland was once very poor—her agriculture neglected and left to serfs; but agricultural schools were instituted, and fostered, and sustained, and now Scotland is the garden of the world.

He urged the good which would be done to all of society, by the interweaving of science with agriculture, by giving to farming as a profession, the aid and countenance of learned men, and the benefits of learning. He spoke of the beautiful varieties and riches of the natural world, ever before the observation and scrutiny of the farmer—of all other things, most calculated, when rightly improved, to enrich his taste and cultivate his mind. To him the glories of the morning, and the softer tints of the evening, were ever visible; and for him, all the lessons of the earth in its abundance, and in its capacities, were ever unfolding.

He advocated a liberal system of education for the farmer, as the very one who, by his business and profession, would be most benefitted by the results of the discoveries and labors of scientific men.

March 11*th.*

THE AGRICULTURE OF BELGIUM.

[By the desire of the gentlemen attending the agricultural discussions held in the hall of the Assembly, the Hon. Mr. BURCHARD, of Oneida, addressed the meeting on the above subject.]

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Mr. President—No country in Europe of so limited a territory, presents a greater variety of aspect than Belgium. The natural landscape of the two Flanders and Antwerp is characterized by a gloominess and monotony which the variety of soil and production can scarcely compensate. Here and there are scattered plains, bounded only by the visual horizon, and intersected by sluggish streams and artificial communications, that serve to drain the country, and afford innumerable facilities for inland navigation. Flanders has a dense population, and her rural districts are delightfully diversified by woods and arable lands, and thickly studded with towns and villages. Towards the sea coast rise the gently undulating downs or DUNES, composed of loose sand, often extending three miles in breadth, but of very moderate height. On the contrary, turn to the coast of Hainault, Brabant, and the Walloon provinces, and you will find charming and romantic situations. Here is a surface, broken by ravines or by abrupt rocks, and there, clothed with great masses of forest. Indeed, the whole of Belgium has a woody appearance. Trees are planted in the hedge inclosures of the fields, while the roads are lined with double rows of the majestic linden, and the canals shaded with poplars and willows.

The western part of Belgium was early known as the centre of European manufactures and commerce, and while the rest of the civilized world was merged in comparative barbarism, the mechanical arts were successfully cultivated in this region. At the period of the crusades her navigation was so generally developed, that when the kings of France and the emperors of Germany sent their mariners by land or in Venetian or Genoese bottoms to Asia, the Flemish marine boldly coasted France and Spain, passed the Straits of Gibraltar, and disembarked her brave troops on the coast of the Levant.

There is Bruges, a few centuries ago, the entrepôt of the whole commercial world; and during the palmy days of the Hanseatic League, she was a leading city, and grand compting house for that wonderful trading establishment. Her ancient and splendid edifices are monuments of her former opulence and grandeur; but this whole country, except the margin of streams, was either a *dry sand bank*, or an immense morass, on which grew the *heath* and *aquatic plants*. Even now, if left to nature, instead of increasing in fertility, it would return to its original *state*. And what proves beyond the shadow of doubt that it was formerly submerged, is the alternation of its layers of sand and clay, mingled with marine shells. Indeed, the Rhine has brought down from the Alpine regions and deposited its debris, in the shape of sands. The Meuse and Scheldt, in

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their advances to the ocean, have formed a fine argillaceous and calcareous soil, the remains of animal and vegetable substances, drawn from their basins or brought by the oceanic tides. The barren heath, by a happy combination of clay and vegetable and animal manure, has thus become a garden, and its rich, black, loamy mould, indicates the fertilization of centuries. Those salt marshes, called in the language of the country, *schorres*, have been reclaimed from the inundation of tides, by embankment and dykes, and are now proverbial for their fertility. In the vicinity of Ostend, the great Polden, for example, bearing the appellation of Snaerskinke, has been formed in this way, and exhibits a noble specimen of Flemish industry and perseverance. Traveling over Pays de Waes, a perfect garden, we should little suspect that the fine dark loamy soil which, on every side, teems with the rankest vegetation, was formerly a dreary waste, on which a blade of grass scarcely grew.

The flourishing condition of agriculture in the low countries is unquestionably the mainspring of their prosperity in manufactures, which, in turn, by increasing the size of towns and the demand for the riches of the soil, give a stimulating activity to the interchange of commodities. To what other cause can we attribute the extreme multiplication of the human species, but the development of these great sources of national prosperity?

Commerce and manufactures have multiplied objects of cultivation and increased the demand for them. The production of flax, hemp, oily and coloring plants, are thus made as profitable to the husbandman as the production of breadstuffs and animal food, and the field that grows the raw material of the white veil which throws such bewitching charms around Flemish beauty, raises the price of the cereal and culinary productions. The vacilating wants of trade may disturb for a season, however, the just equilibrium between production and consumption, but eventually all the fruits of agricultural industry become balanced. Thus the perfection of rural economy that arises from the necessity of providing for the subsistence and comfort of an increasing population, is the glory of the country. But a stranger, on crossing the Belgian frontier, would be greatly surprised to find her rural districts so strongly wedded to antiquated notions and modes of husbandry. Even the introduction of new plants, except the potato and some coloring vegetables, have been of rare occurrence. It is true, that the genius of Napoleon called into cultivation the sugar beet, but it may be said, the improvements in agricultural implements and seeds, for which other

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countries are so justly celebrated, have been slow to find their way into this region. What a striking contrast do the American and English farming utensils form, to the Hainault scythe and Flemish plow. The present king of Belgium has indeed introduced many modern improvements in the tillage of land and the breed of domestic animals, yet, strange to say, the characteristic tenacity with which the Belgians cling to old established notions, have retarded the successful accomplishment of these governmental ameliorations.

But when we advert to the fact, of the enormous increase of the value of land and buildings within the last ten years, the beneficent supervision of the government is every way worthy of praise and imitation. The great council employed to watch the agricultural interests, together with a veterinary and agricultural college, all stationed at the capital, have elevated the standard of education among the cultivators of the soil, and called into successful activity an immense amount of dormant wealth.

This college is liberally patronized by the State, and its chairs are filled by professors who are men of science and great experience; and under its auspices are delivered lectures on chemistry, botany and agriculture. Societies have been formed in the various provinces for the promotion of rural industry; but what has contributed in an eminent degree to develop the capacities of the soil, is the abolition of the feudal tenures, game laws, and partial and onerous burdens on the industrial classes.

The law of equal succession, which has subdivided France into many small estates, owned by frugal and temperate, but poor proprietors, works admirably in Flanders. The prospect of a rural retreat gives a stimulus to the industry and economy of the peasant. For here the cultivators of the soil either hold it in fee, or are tenants on durable leases. What a contrast does it form to that miserable métayer system of tillage that blights the industry and enterprise of some of the finest territories on the continent. The operative classes are not content with the bare necessaries of life; their tidy wives and well clothed children show a vast superiority over the starving and haggard population of Ireland. Even a fondness for religious processions and superstitious pageantry that connects Roman Catholicism with filth and squalidness in Savoy and Italy, are not the accompaniments of the rural populace of the *low countries.*

On the contrary, what traveler is not delighted with a Flemish farmery, where order and neatness dwells? Even in the stalls in which the horse and ox are fed, you can be seated and regale yourself with

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a cup of coffee, or the smoke of the pipe, without offending the most sensitive nerves. Go and ascend the lofty belfry which surmounts the old Town-Hall at Bruges, and the panorama to the north will fill your eye with a beautiful succession of vividly verdant fields, varied by masses of wood, streams and picturesque villages. But this very soil, if cultivated like many parts of the world, would require a heavy importation of human food to supply the demand for the consumption of the people. But Belgium exports an immense quantity of her agricultural productions. Let us examine this matter for a moment, and see whether the true cause of this unsurpassed affluence of husbandry, may not be traced to the economy and industry of man. The pervading principle of her tillage is to make a farm like a *garden*. Even the pasturages are so subdued and fertilized that they yield four-fold more than the same land in less cultivated countries. It is conceded, that 10 acres of the best vegetables would maintain a larger stock of grazing cattle than 40 acres of common farm or coarse grass. The lease of land on long terms, based on improvement, the payment of rent in money, or kind combined with money, the restraint not to sub-let, and the powerful motive to obtain profitable crops, joined with habits of sobriety, forethought, and a well balanced economy, have elevated the Belgian peasantry far above the like operatives on the continent.

[A gentleman asked Mr. Burchard what was the size of a Flemish farm ?]

He replied that they varied very much in size in the northern parts of the country, but rarely exceeded fifty acres. You often meet with farms of twenty acres, on which you will find a pair of fine horses, four to six milch cows, a farmery that contains a good and substantial dwelling house, out houses and stables, kept with wonderful neatness and economy. Within the area, and below the rural buildings, is placed the urine tank, that receives the liquid discharges from the domestic animals, and hard by is the compost bed, on which is deposited whatever can form MANURE.

Here permit me to say, that on a farm which I had the pleasure to examine, that contained but 45 acres, there were fed two horses, fifteen milch cows, and several heifers to supply stock, besides five cows and some calves fattened off yearly ; some few miserable sheep and long-legged and slab-sided hogs, and the master and family, with six male and female domestics. The produce of the stock of live animals was not the moiety of the real income of the farm. The surface was teeming with artificial grasses, wheat, rye, rape, and flax,

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all richly remunerating the indomitable perseverance and unwearied industry of the cultivator. The cattle and horses were continually stalled; fed in summer on green clover, and in winter with esculent roots relieved by meal made from small grain. But what was an inexhaustible source of fertility to this productive spot, took its rise from the careful preservation of all vegetable and animal matter, together with the excrementitious SUBSTANCES of everything living within this shed. And what in other countries is wasted, is here an article of commerce—I allude to URINE, which in a single cow is worth ten dollars a year.

No wonder then, that the net returns to the cultivators of the soil, will average more than a quarter of the value of the grass produce. The deduction consists in the charges of production, such as the price of seed, manure, labor, interest on capital, repairs to buildings and farming utensils, or a rent to the proprietor, the public burden of taxation, and the annual loss by the decay of strength and mortality of the domestic animals—nor is the cost of the food of men and beasts to be neglected—in this account.

[Mr. B. was here asked what was the annual rent of the land ?]

He replied, it was as variant as the quality of the soil. A tenant on a *polden*, can well afford to pay the proprietor $12 per acre, and then receive a full recompense for his industry. A *polden* can be cultivated 50 years in succession without manure. You all recollect, I informed you in my introduction, that a *polden* was low, marshy land, reclaimed from tides by embankment, and drained by numerous canals that discharge their surplus waters through sluices at the reflux of the sea. When this fails, you will find windmills in motion, that work hydraulic engines to raise the water and throw it outside of the embankment. Its medial produce is, in rape seed 36 bushels, barley 80, and beans 30 bushels by the acre ; a productive agency ample to meet such rent. However, $5 by the acre would be the ordinary standard of rent. There are cultivated parts that will not yield $4. It must be borne in mind that the tenant must occupy the premises, pay taxes, make repairs, and give *better* accommodations to the incoming successor at the close of the term.

Pays de Waes is a highly cultivated region, and presents the grateful spectacle of the rigid economy and the agreeable comforts of the small proprietors.

These little farms range from three to ten acres; but not a horse or a plow is to be found on these rich fields. The work is all perform-

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ed by the SPADE. Trenching is the secret of the fertility, combined with a skilful adaptation of manures. Even this scanty domain shelters three milch cows and four pigs, with goats and poultry. What is more, you see here plants for dyeing, the varieties of cereal crops, legumes, edible roots and oily roots, including hemp and flax; a mighty farm in miniature, on which are erected structures convenient for man and beast. Here are to be found the dung pit, cisterns destined to receive the urine of cattle, and the adjacent pool, into which flows the superabundant waters from the barn-yard, and the receptacle for weeds of the garden. Gentlemen will pardon me for reminding them, that *whatever is convertible to manure* is sought everywhere with *avidity*, and it has become as marketable as any article of commerce.

[Here a gentleman questioned Mr. B. as to the price of male labor.]

I must answer the gentleman from Albany from memory; and I hope to be within the bounds of correct prices. A plowman or laborer obtains $2.50 a month, with their food. The daily board is worth 15 cents. One agricultural laborer can obtain $75 a year, and find himself, which would be equivalent to $25 with meat. Their food is plain, and consists of boiled milk, butter-milk, milk and bread, potatoes and pork five times a week, and rye bread. They are sometimes treated with eggs, salt fish, soup, and various vegetables.

The domestic relations of the Flemish are admirable. The master, mistress, children, and field and house servants, all sit around the same board. How delightful is the spectacle of a pure linen table spread; the polished dishes, the well dressed viands, the tidy and swelling bed, the burnished or carpeted floor, and the unsullied male and female habiliments, give the air of cleanliness and comfort to these rural retreats. What a striking contrast does it form to the poverty of other countries, where one thread-bare coat is worn by more than a dozen lean devotees in turn, falling before a patron saint on a festival or holy day. But here, allow me to say, there is a marked difference, both in the wages and treatment of day-laborers temporarily employed in weeding crops and flax culture. The daily allowance to these, hardly ever exceeds 13 cents, including their food; while boys and girls are paid but a half a frank with their meat. These occasional servants seldom dine with the proprietors.

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I am asked how the female operatives fare in the lace manufactories at Brussels? They will not do to compare with the same class of laborers in the American workshop. Their emaciated and diminutive forms, slovenish attire and woe-begone countenances, tell the story of their low wages and long and laborious services. But the production of their industry is remarkable for its delicate fineness, and a great elegance and variety of design; the patterns are all worked separate, and form one of the richest articles of commerce.

The preparation of the soil for the growth of flax is a striking example of Belgian husbandry. The land is repeatedly plowed and harrowed, then comes the richest manures, urine and rape cake mingled with great exactness, and completely saturating the soil with its fatness. A strong proof of the pulverization and faithful admixture of whatever can contribute to the growth of vegetation, is the even and healthy appearance of the young plant. No wonder; 2,400 gals. of that liquid manure had been spread on the acre.

From infancy to the period when the plant is plucked from the soil, not a weed is allowed to grow near it. The stranger is quite astonished to see the fields swarming with sunburnt females with their red slips on their knees, removing the noxious and valueless growth. Gentlemen will bear in mind, that drill husbandry is not known in foreign agriculture. Everything is sown broadcast. Hence, in order to keep the land clear, weeding is very laborious.

[Mr. B. was asked, at what period of cultivation was the land intended for flax culture manured?]

He replied, they plowed before manuring in one set, and without a furrow; therefore it became backed in the centre, then rolled with a heavy roller, and at last the liquid manure is spread over the surface.

The flax is placed upright in the water to ROT IT, and sticks are placed on it so as to keep it in its proper position. When the period arrives for removing it from the water, it is well known from its sinking in the fluid. The Lis and the tributaries of the SCHELDT are blackened by the steeping of the flax. It must be recollected that Belgium is as celebrated for its fine linen as ancient Egypt; and there is, between the two countries, also a strong analogy in the character of their alluvial soils.

The rape, or colzia, is an important agricultural product of Flanders, and it is indeed a very profitable biennial and oleaginous plant.

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It is usually sown in September, flowers in May, and is harvested in July. It is one of the most productive crops of the country; oil is expressed from its seed; the cake forms one of the most powerful and stimulating manures; even the rape-dust, reduced to powder by a mill, when sown along with other crops, if the season be propitious, will almost yield double fold. Its green leaves afford EXQUISITE FOOD for sheep, and the straw in the winter yields some nutriment for the starving cattle.

A great surprise seems to prevail among gentlemen with regard to raising cattle. On the whole continent, I was not more surprised than my first acquaintance with the Belgian neat cattle. The breed is of the Dutch short horn kind; their color black and white. I have already adverted to the fact, in Flanders, cattle are stall fed; and I regret to say, the milk cows or beeves at the shambles of the butchers, are vastly inferior to the stock in England or Normandy; and no wonder; the winter season is a period of half starvation for the poor ox, which is fed on dry straw, varied by stinted turnips and sorry carrots, and before the green grasses of spring come to his manger, he is emaciated to a mere carcass.

The horse of Flanders is remarkable for his strength and working character. His prevailing color is chestnut of every shade. The compact form and spirited motion, notwithstanding his deficiency of depth in the girth and a dip behind the withers, render him an admirable animal. His diet is given with great precision, and no pains is spared to make a smooth and healthy hoof.

[On being questioned whether Belgium had not different and approved breeds of horses ?]

Mr. B. said, Leopold had imported into the several departments rare and superior varieties of saddle and draught horses, descended from the purest and most approved lines. And the studderies scattered over the land under an enlightened monarch's patronage, have, within a short period, accomplished much in raising the standard of excellence for this noble animal. In Luxemburg, you meet with a small sized horse called the cub, a powerful and highly spirited animal ; he is short-legged, well boned, and good under the saddle and in the harness. Do not suppose that this noble animal is confined, in the countries of which I am speaking, to stables. On the rich clovers that give so much freshness to the far-famed Campine plains, you can see droves of them grazing at large, or sporting with great gaiety.

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A country long known in the commercial world for its superior woolen cloths and carpets, would seem to be the appropriate region for growing the raw material. The indigenous sheep are long, coarse wooled, long legged and lean bodied animals; the fleece light, and the flesh, miserable and repulsive food. This is imputable to a singular management. After nightfall they are stabled; during the day they follow the shepherd and his dog, along the highways and hedges, to crop a scanty and precarious subsistence. The little Ardenne species that ranges the mountains overlooking *Liege*, has a finer fleece, and is famous for its mutton.

It must be confessed, that Belgium imports largely from foreign countries, wool, for her extensive manufacturing establishments. You all know that this country was formerly under the yoke of Spain, and afterwards Austria; and while she was dependent on these powers, the importations from them in this great staple must have been immense. Within a few years, the king has introduced and now is successfully raising on the royal domains, Leicesters, South Downs, and even Saxons and Merinos. But what a striking contrast do the choice breeds that range the sweet pastures of Kent and Norfolk, bear to the flocks of Brabant and Luxemburg.

The common food of the industrial classes is pork, which they eat five times a week for their dinner. And where can be found a more slabsided and gaunt looking being than a Flemish hog? He even out-rivals the famous Tonawandas of the new world. And how can it be otherwise? His long snout and semi-circular back are incontrovertible evidence of his stinted allowance in the piggery. It is true, in the Walloon provinces, vast herds roam over the forests and devour immense quantities of mast, but their meat is oily and tough. The bacon of the country is vastly inferior to the best American and European marks.

Belgium is a country behind England in the rearing of domestic animals; nothing is worthy of imitation but the raising of horses. In vain you look for good butchers' meat in the shambles; and as to the carcass of the sheep, it is but a little remove from carrion. In a country where there is such a scarcity of meadows and pastures, forage must needs be procured by artificial cultivation. The favorite grasses are often top-dressed with ashes brought from Holland, and the use of the latter has become so general, that it has become an article of commerce between the two countries. These ashes come from the peat, which is the principal fuel of the Dutch population,

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and the salts of soda and lime contained in them, must be favorable to the soil of Flanders.

The gentleman from Columbia (Mr. Gould) asked Mr. B. if saline and mineral manures were much used in the Flemish provinces?

He said, lime and gypsum are but little resorted to in the Netherlands. However, I might add that lime is substituted for peat ashes on the low grounds of the *Meuse*, but it does not answer as well for top-dressing as the latter manure. Animal and vegetable manures seem to be the powerful agents in resuscitating exhausted soils. The loose and floating sands are bound together by the Arundo arenaria, and when a sufficient stratum of vegetable mould is formed, the pinus maritimus or sea pine is planted. This tree grows rapidly, and after six years' growth, affords very good fuel, while the leaves and vegetables decaying improve the soil. Nothing is more common than two crops. You see carrots growing among the flax, and when the latter crop is taken from the ground, the carrot is half grown, and presents, while growing, a pleasing appearance.

There are many modes of cultivation of the earth in Belgium that will not be adopted for centuries in America. The succession and rotation of agricultural productions are carried to unsurpassed perfection. And we ask, what country vies with Flanders in the systematic economy of land, and minute attention to the qualities of soil? Its great productiveness may be attributed to a skilful and judicious management of the various manures.

The agricultural population, it is true, are not imbued with a knowledge of the sciences which are accessory to husbandry, yet the industry and perseverance of centuries have made them, in the main, successful cultivators. Their rude farming utensils, the miserable breeds of cattle, and more reprehensible wool-growing, are the only glaring defects of the system.

When America shall have attained a redundant population, and become rich in the fruits of her commerce and manufactures, she, too, may be willing to convert her marshes into *gardens*, and her mountain sides into rich pastures.

When Mr. Burchard concluded his lecture, by the arrangement of the previous evening, the subject of *Manures* was under discussion.

Hon. Mr. Gould (of the Assembly.) This subject calls for the attention of all agriculturists, and the first want that meets us, is the want of a proper basis for discussion—a want of *reliable* experi-

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ments on which to found our reasoning. Mathematicians in France and in England agree on certain propositions, clearly ascertained and demonstrated. That two and two make four, is a truth in the certainty of which all can reason. If you ask any mathematician the square root of four hundred, he does not hesitate in his answer; and so because the law of propositions is fixed and ascertained, it can readily be known what should be the curve of the plow to turn over our ground most easily, but for the want of such data in regard to agricultural manures, ask the gentleman from Oneida, and he will tell you one thing, and another will give a different opinion. There are no reliable results. It indicates the excessive looseness of all our notions in regard to husbandry.

There was an experiment tried at the seat of the Earl of Zetland, Ash Hall, in regard to the relative effect of nitrate of soda and of common salt on the cultivation of grass. Each experiment was tested on half an acre. To the eye, the result seemed altogether in favor of the nitrate of soda. There was a richness and luxuriousness of appearance about it far superior to the other. But the grass was cut and carefully weighed, and it was found that the quantity of hay cut from the half acre to which the nitrate of soda had been applied, weighed eight hundred pounds more than the other. Every farmer among us would have been satisfied with this, and would have gone on through life, assured of the superiority of the nitrate as a manure. But in England they try experiments still deeper; the hay from each was thoroughly dried and put into the barn, and it was found *then* that the acre on which the common salt had been used, had yielded four hundred weight greater than the other! and that all the apparent rankness and richness of vegetation of the other, was owing to the absorption of the surplus water and the gases, and that so soon as by the action of the sun the gases were evaporated, all was gone. How many farmers, Mr. President, do you suppose would have taken the trouble to measure their land, and all the accessory circumstances necessary to have made a perfect experiment?

It is this want of accuracy that makes it so difficult to settle a question in farming, by reference to the agricultural press. I have gone over the Cultivator and the Genesee Farmer with the utmost care, to see whether I could learn definitely and with reliable accuracy with respect to the proper rules to be observed in planting potatoes. I found one result claimed to be an example which every

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one should follow, and by pursuing my search found its reverse declared to be equally infallible.

One man, in detailing his experiments, would omit to say what kind of potato he planted, another had forgotten to tell any thing about the nature of the soil, whether sandy or clay, or what characteristics it bore. Every one left out something of that which it was necessary to know to substantiate the accuracy of the experiment. Such is the slovenliness with which our tests are applied, and results ascertained or detailed.

Unless our experiments are conducted with vigorous accuracy, unless farmers in making them, carefully note every circumstance influencing the vegetation, in vain may we expect to accomplish any thing with credit to our nation or profit to ourselves. For the want of such experiments, our farmers will be left for years in ignorance of all the subtle agencies that affect vegetation.

It is obviously desirable to remedy this state of things, to adopt some plan by which the money and the labor which is annually expended in the trial of experiments, should be made subservient to the upbuilding of agricultural science.

In order to effect this, it seems to me desirable that the State society should not only offer premiums for experiments, but provide for making them in such a manner that they shall be susceptible of mutual comparison, so that contradictory results may be explained by the difference of the circumstances under which the experiments were made.

Hence a formula should be prepared for the guidance of agricultural experimentalists, which should embrace the leading influences which control or modify the process of vegetation.

It is of course impossible for me without reflection and at the spur of the moment to specify or classify all the subtle influences which are combined for the germination, the growth and nutrition of plants. Some of the most prominent that occur to me are the following: 1st, soil; 2d, climate; 3d, wetness or dryness; 4th, electrical relations; 5th, goodness of the seed; 6th, mechanical cultivation; 7th, manures.

1st, soils. Suppose experiments were simultaneously instituted in each of the counties of this State for the purpose of ascertaining the

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best mode of raising Indian corn. It is clear that what is good on one soil will be bad on a soil possessing altogether dissimilar properties

In order, therefore, to derive particular benefit from the experiment, it is necessary to know the precise nature of each soil upon which it was tried. And a comprehensive formula so prepared that a farmer could give this information, is the grand desideratum in question. Chemical analysis would aid in this matter, but it is not sufficient of itself, because two soils, exactly alike in chemical composition, might give different results in consequence of a difference in mechanical texture. A knowledge of the character of the rocks from whence the soil was derived, would assist in identifying soils, but in practice nothing would be more likely to be useful than a statement of the plants which grow spontaneously upon it. This would assist in forming an idea of the chemical character of the soil, while the height of the plant and the magnitude of its leaves would form an approximate standard of its fertility. Thus if a given process was found to be beneficial to the corn crop in Rensselaer county upon a soil where a given plant grew spontaneously to a given height, a farmer in Chautauque county, where the same plant grew to the same height, would, without doubt, find that the same process would produce similar results to those obtained in Rensselaer; while a farmer in Monroe or Orleans, where plants of a totally dissimilar species, are indigenous, would find this process to be injurious rather than beneficial.

2d, Climate. This is influenced mainly by *latitude*, hence where experiments are detailed and recorded, the latitude of the place should be given; but latitude is greatly modified by other considerations; the chief of them is *aspect*. Every farmer knows how different are the results which are obtained where the field slopes towards the north or towards the south; hence the aspect of the land should be always stated in giving an account of experiments.

Shelter exercises an important influence also—a belt of trees to protect a field from the northern blasts is almost equivalent to half a degree of latitude. It is not necessary or advisable for me to give minute specifications under each of the heads which I have stated. Those which I have said are sufficient to illustrate the idea which I was desirous of presenting to the meeting; and if this imperfect illustration shall have a tendency to promote the grand object which is so dear to all of us, I shall not regret that I have trespassed so long upon your attention.

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Mr. JOHNSON agreed with Mr. GOULD as to the imperfect nature of the experiments made heretofore, but was glad to believe that a better day was dawning, and that the efforts for this result, which he could assure the meeting, the State society was putting forth, would meet a rich return in doing good. In connexion with the well stored premium list, important queries on prominent agricultural topics had been distributed by the society, and they had so looked to certainty in all their interrogatories, that they had the greatest hope of arriving at much that would be the sure basis for future operations.

The society intended to have a thorough agricultural survey made of several counties, after the English plan, to be made with the same care as the surveys in England were—10 or 15 years ago, when English agriculture was not what it now is. The results of the surveys had demonstrated the wants and suggested the methods of improvement, and a contrast between that period and this would be the best illustration of what had been gained. And such vast changes for the better, he believed would be the results of the efforts now making in this country.

March 24th.

MANURES.

The HON. MR. FARRINGTON, State Treasurer, in the chair.

Mr. HOWARD. The first question to be considered in reference to this subject is, what is manure? and in brief it may be answered that it is that which constitutes the food of plants, and it has come latterly to be divided into two divisions—organic and inorganic manure. When it has been subjected to calcination and burning, that which remains after this is organic; that which has been dissipated by the fire is inorganic, and the organic consists of four elements—carbon, nitrogen, hydrogen and oxygen. The inorganic of various mineral earths—iron, sulphur, &c.

To discuss this question in all its branches requires time and thought. The inorganic, such as affect the soil, are properly before us for review. Those which are dissipated by fire, and do not affect the soil, are not so immediately in consideration. I like to hear practical observations from practical men in reference to this subject,

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and the experience and observation of every farmer is the source from which I would draw information. The idea has been put forth by some who have written on the subject, that what we call organic substances in manure, more especially vegetable or carbonaceous, are of no consequence when applied to the soil to benefit it, except as they tend to improve it mechanically, rendering it open and more porous, and giving it the requisite physical texture. The idea is entertained by some that the ashes of plants contain every thing that is necessary to be applied to the soil. Not intending to discuss the subject at great length, I would like to ascertain what practical facts can be brought out in reference to this subject; and I would suggest to the farmers and all present, that the proper question is, whether a load of manure burnt to ashes upon the soil, will benefit the soil so as to cause it to produce as good crops as a load of manure used in the ordinary way—whether the ashes of the manure will be of as much benefit as the manure itself?

Mr. H. was aware that those who took the affirmative of this question did not deny the importance and necessity of carbon and nitrogen to the vegetable organization, but they hold that the carbon is obtained wholly from the atmosphere, and that there is so large a quantity of nitrogen in the form of ammonia in most soils, that the quantity which could be added in manures, is of no consequence. Now it was not doubted that the effect of ashes or alkalies was in many cases highly beneficial. This is seen in the operation of paring and burning, and in the application of ashes in various ways; but in ordinary cases the alkalies act, more or less, with organic matters, and the effect is generally quite obvious. The benefit of mixing ashes or potash, with peat or muck, has often been witnessed. The good effect of the alkali in this instance is accounted for partly by the fact that the peat sometimes contains an acid, denominated *tannin* or tannic acid, which is prejudicial to vegetation, and the alkali, by combination, neutralizes the acid. But to account for all the effects of ashes will not be attempted. The question is, whether the ash of plants and substances contain all the elements which it is proper to apply to the soil—or to state the proposition fairly—suppose the soil to possess the requisite physical texture, would the ashes remaining, after burning a load of barn yard manure, benefit crops as much as the manure would have done, if judiciously applied?

Mr. Sotham had not seen any experiments made by burning barnyard manures, but he knew that it was valuable previous to burning. The

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excrement of animals, mixed with slaughter house manure, such as blood, liver and refuse of the butcher's yard, mixed together, and so far decomposed as to cut out with a shovel, is decidedly the best compost you can apply to the land. I never saw a soil yet that was not grateful for such manure when properly applied; nor do I think that such a composition can escape by evaporation when once deposited there, either on the surface or mingled in the soil. The rain may wash it off and carry it lower. He had seen many experiments with ashes, and which have proved a very valuable manure. For instance. On many of the light soils in England, such as sand, stone-brash, gravel and light loam, much of the *sanfoin* is sown. Manured for turnips, the turnips fed off on the land, and then sowed with barley, and the sanfoin seed sowed with the barley. This sanfoin is mown for eight, ten, or fifteen years, and not a particle of manure put upon it. It is generally grazed the last year, and then breast plowed. A thin slice of the sod is taken off about half to three-quarters of an inch thick; as soon as it is dry enough it is thrown together in small heaps and burnt. Part of the ashes are black, and a part red. They are spread regularly over the soil and then plowed in very shallow, well dragged with a heavy drag crossways, and then thoroughly harrowed with lighter harrows, the soil is well pulverized previous to the second plowing, then it is shallowly plowed again, and the turnip seed is sown on the fresh furrows. I have never seen better crops of turnips than by this process, and the ashes have lasted as long and benefitted the succeeding crops for three years, and sometimes longer, quite as long as barn-yard manure. Now, if the principal substances, or organized matters are dissipated in the atmosphere by the burning, as Mr. Howard says, where did these turnips and the succeeding crops get them from if it was not from the ash? I have seen two crops of turnips in one field, (at Northbuck, Gloucestershire) one part breast plowed, the other manured with a heavy dressing of barn yard manure, both in the same state of cultivation, previous to the burning and manuring, the latter plowed three times, and in a better state of pulverization than the former, when the seed was sown; still the breast plowed piece was far the best. How is this to be accounted for, if the principle of vegetation is dissipated? I do not believe it. Another instance. I have seen frequently and tried the experiment. Planted two rows of potatoes, the soil in the same state. To one of the rows I have put ashes, the other none. The former grew luxuriantly, the potatoes large and a heavy crop, the latter very small and a light crop. Where did the potatoes get their sustenance from if it was not from the ashes? Both had the same resources from the atmos-

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phere. The ashes could not have the power of attraction over the inorganized matter in the earth as that could be nothing more than the earthy substances, or inorganized portion of plants, according to Mr. H.'s representation. This is a very important subject, and requires much consideration. He wanted no better proof than a good crop for the manure applied.

Mr. HOWARD said, it was certain that the application of ashes to the land is productive more or less of beneficial results, and this is illustrated by the case of the prairies, which are regularly burned over and yet produce large crops of grasses. An accurate examination of the soil of the prairies would show that they contained a large amount of vegetable matter, and the action of the ashes thus yearly accumulated upon them, has seemed to be salutary.

Dr. GALE remarked, that chemistry in its length and breadth is not absolutely necessary to the practical farmer. The study is interesting in the extreme, and the whole universe is *one vast laboratory.* Give a man of mind a taste of the science, and his thirst for the knowledge will be such, that it will be difficult to satiate it.

It is a well known and admitted fact, that all substances, whether vegetable or animal, are resolvable into certain principles, which are termed *ultimate principles.* These can be reduced by analysis no further, whence their name.

The substances which are known to furnish most of these ultimate principles, are those to be selected to make artificial manures; but it requires no Solomon to come from another world to inform us, that good barn yard manure from well fed horses, cattle, sheep, swine, &c., *well kept*, by which I mean so as not to have their constituents washed away and its gases evaporated, will furnish almost every thing requisite to fertilize the soil. A little lime or chalk may occasionally be necessary. If the soil be wet, it should be thoroughly drained. The system of farming must be altered. Instead of selling every thing off—every thing that can be kept, must be—and the deficiency of the ultimate principles caused by the sale of corn, butter, cheese, &c., made up by artificial manures; and if a farm be on a proper tenure, what so profitable an investment for the farmer's capital.

Let a small treatise on practical agricultural chemistry be reduced to plain English, with a good *Glossary* at the end of the work, and it may be put into the hands of our common school teachers, and

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every boy instructed therein may understand it; and, if thought advisable, every school might have a small piece of land attached to it, where artificial manures might be applied and experiments made.

Dr. GALE gave an interesting statement relating to oxygen, hydrogen, nitrogen and carbonic gases. In answer to a question by the President, Dr. GALE also stated that the great error attending our use of artificial manures was, that we did not make them weak enough to apply to the land. There were failures because applied too strong, and thus the plant was destroyed. He cited an instance, to illustrate the effect of the application of ashes, where in a garden the use of manures had been had, and the proprietor—a very neat man—offended by the effluvia, directed them to be burnt. The garden produced a very poor and indifferent yield, but when next year treated in a different way, by the old process of manuring, the product was large and remunerative.

HON. Mr. WOODRUFF (of Wyoming) said, that in his farm culture he was in the habit of using coarse manure and turning it under, and he believed that he derived ten times more benefit from this practice, than by consuming it and applying the ashes. And he believed that were a piece of ground selected, in all other things in good condition, and one-half of it treated with coarse manure, and the other half with the ashes, the manure portion, would yield one-half better crop. He had tried this with his last year's crop of wheat, and the results verified, by the superiority of the grain, with the manure, the truth of this theory.

Hon. Mr. DIVEN (of Steuben) and Mr. TAYLOR (of Madison) gave interesting descriptions of the manner in which, in their own agricultural practice, they had realized and tested the value of manures to the soil.

Hon. Mr. BURCHARD (of Oneida) believed that the burning of manure had a tendency to exhaust the soil, and such he believed to be the experience of agriculturists. We know perfectly well that in times of great drought, when fires take and run over the land, it completely exhausts it—entirely consuming the vegetable matter. The prairies had been alluded to. Vegetable matter accumulated on them very considerably, and the soils became rich in the process of time, but he had seen on the barrens in Kentucky, where the Indians burnt over the land, many portions made perfectly sterile by the process. There was an interesting process carried on by Nature in

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the restoration of soils. The *Poldars* of Flanders were once inundated by the Ocean, but by embanking around them, and by ditching, the tides which in their highest rise would be about fifteen feet, were kept under control, and the land, enriched by the deposit and decay of marine and vegetable substances, soon became a subject of the excellent and thorough cultivation which it now received.

When the prairies were burnt over by the Indians, the action of the fires burnt over the surface and did not destroy the deep vegetable mould underneath. Indeed it would seem impossible to do so, when, as in the case of the prairies near Vandalia, in Illinois, the vegetable mould actually extended to a depth of fourteen feet below the surface. It was the grass that was burnt over, not the mould. Indeed he knew of but one instance where the burning of the vegetable mould benefitted the crop, and that was in the case of the tobacco plant. The planters in the month of February, in the cleaning of their land, collect the brush and burn it over; and it doubtless is for the benefit of the young plant, protecting it from worms and other vermin. His impression was, that the burning of the soil tended to destroy the pabulum, the very food for the plants. The prairie fires roll over the land, but do not extend below its surface.

The President (Mr. Farrington) narrated the manner in which hills in his vicinity, in the region of the Susquehanna, had been, by the Indians, so far back as the recollection of the most aged extended, burnt over, and the poverty and sterility of the soil consequent thereon, making them a remarkable exception to the other land, and plainly indicating that the action of the fire had worked great injury to their productive qualities, and yet when relieved from this—when they became subject to constant cultivation, when the vegetable matter became intermingled, again these hills had proved to be excellent arable land.

Mr. J. Lawrence Smith, in speaking upon the question, of the comparative value of manures, before and after calcination, adverted to the conflagration of the woods, along the line of the Long Island Railroad, where fires had produced so much destruction, and yet it had been found that the young trees grew more rapid and vigorous than when the forests were cut off in the ordinary way.

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March 31*st.*

MANURES.

The subject being renewed that had occupied the attention of the meeting on the last evening.

The Chair was taken by the Hon. Mr. BEEKMAN, of the Senate, who announced the question, saying that no subject was more important to the farmer than *manures*, as his very prosperity depended upon it.

Mr. B. P. JOHNSON had hoped that some one of the farmers whom he saw present would have opened the discussion. It seemed to him to be a very important one—that it might almost be said that the foundation of all our agriculture in this State was based on farm-yard manures. He was aware that in many districts of the State, particularly the wheat growing counties, it was not possible to have a supply of this for all purposes, and other substitutes, of the green manures and otherwise must be resorted to, but after all the chief reliance must be on the farm-yard.

The gentlemen present, he knew, were aware that in many parts of the State very little attention whatever was bestowed on this subject. In some no care is taken to preserve it—especially the liquid manure. In many no means are adopted to shape the farm-yard so as to collect and secure it, while in other localities, readily occurring, he knew, to the recollection of many, the barn was carefully placed on a hill side so as by all means to get rid as readily as possible, of that troublesome appendage—manure!

But if farmers would be successful, they must give their attention to the preservation of manure. If they did so, it would need but a very short trial, to prove to them how liberally the result rewarded their efforts. Every species of manure deserved their attention. It was so in the old countries. In Flanders, whose agriculture had been described to us by a gentleman a few weeks since, a care and nicety and economy was observed in collecting manures, which evidenced itself in the crops, which for such a soil as that of Flanders, such nurture of it rendered very superior. There every thing was secured—solid—liquid—all—and nothing was lost. It was the result of experience with them that it added immensely to the value of their soil. Providence has so ordered it, that through this agency is returned to the soil, that which had been taken from it by the crop, and thus the earth was ever kept in its strength, and in preparation for use, as the producer of food.

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Of all the manures that have yet been invented or used, the manure of the farm-yard, made from the plants, the growth of the soil, was the only one, so far as his information extended, which possessed in itself *all the properties* necessary for the growth of plants. Various special manures have been invented, and many discoveries made, but none to his knowledge which as yet could in all particulars and as a safe reliance answer as a substitute for the manure of the farm-yard.

A distinguished chemist has said that a manure could be prepared, the force of the fertilizing qualities of which would be such that a person can carry with him in his pocket sufficient to nourish his wheat crop, or something analogous to that. This statement was made as long since as 1844, and the agricultural world had been waiting with deep interest to see this wonderful manure in operation. As yet they have waited in vain. He doubted not that the learned and distingushed professor had ascertained that Providence, which had so wisely constituted the manure of the farm-yard, for the purpose of promoting and increasing the fertility of the soil, was not so easily to be superseded by all the ingenuity and science of the laboratory.

It is then important that we should have our attention directed to the careful preservation and increase of the manures which are at our command. Let the preparation for the preservation of the liquid as well as the solid excrements of animals be carefully attended to; let the weeds and refuse of the house, of the stables, of the yard, and of the fields, be placed in the compost heap, and there can be little hesitation in saying a very large increase in crops would be the result.

There are various fertilizers which are common which might be alluded to; such as lime, gypsum, marl, peat, &c., but it is important to ascertain, if we can, from practical farmers here, what is the best method of increasing the manure of the farm, on which, for the present certainly, in most parts of the State, we must mainly rely. He hoped therefore, in the discussions of this evening, more attention would be given to the manure of the farm-yard. He was satisfied himself that a very large increase of this valuable manure might be secured, if the liquid manure was carefully preserved and combined with the solid matters on the farm, the vegetable matters which could easily be used, so that all the fertilizing properties might be

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concentrated. He would not enlarge, but would give way to the farmers, from whom he hoped to hear in relation to this important subject.

Hon. J. B. Smith (of Monroe) said, that the manner in which he proposed to discuss this important subject was calculated to call out interesting and important suggestions from others, and it was for this reason that he so early took the floor in the discussion of the evening. He was pleased that the train of thought just pursued by the gentleman last up, was so happily calculated to introduce the topic which he proposed to elucidate.

It is an important fact which commends itself to the consideration of every farmer, that the elementary principles which enter into the growth of plants have always existed in the same profuse abundance ever since man began to cultivate the earth. This fundamental principle lies at the foundation of all just ideas of agriculture, and he had ever been of the opinion, that the farmer who exercises the greatest skill, and finds the easiest method by which these ingredients can be reached by plants so as to become assimilated and to contribute to their nourishment and growth, will certainly be most successful and prosperous. If this view of the subject is correct, there is nothing more important to the husbandman than the science of manures, for it is in them that we find the most of these elementary principles incorporated. It was well remarked by the gentleman from Columbia (Mr. Gould,) on a former evening, that experiments testing the true value of different kinds of manures had as yet been very imperfect and unsatisfactory; hence our knowledge on this subject is still in its infancy.

As late as the year 1845, a French writer says, "We are surprised to find this fundamental question, which may have so great an influence on the direction of cultivation, totally unanswered." He also adds: "Nothing has yet enlightened us on the true value of manures." Previous to the time of the celebrated Liebig, the great German agricultural chemist, very little was known of the component parts of the most simple manures. "He says, "When we inquire in what manner manure acts, we are answered by the most intelligent that its action is covered by the veil of Isis, (the Egyptian goddess supposed to teach agriculture). We discover that the excrements of men and animals, contain an incomprehensible something, which assists in the nutrition of plants." Since that time, different manures have been carefully analyzed by agricultural chemists, and the topic

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which I propose to discuss is the comparative value of solid and liquid excrements of animals as a manure.

The enormous waste of manure, of which some of our farmers are yet guilty, must arise either from a reckless disregard of economy, or from ignorance of its true value. In order to illustrate his subject, it was necessary that he should advert in some measure to agricultural chemistry. He assumed that he was addressing those well informed on this branch of knowledge; and it was not from ostentation, but from a desire to enforce his opinions, that he asked their attention to the facts which he should state. It is ascertained that no plant can come to maturity without the presence of that principle in nature called nitrogen or *azote*.

It is this element which forms the basis of vegetable *albumen* and *gluten*, which constitute the most important portion of all kinds of fruit and seeds. It is also found that this principle in its primitive state cannot be assimilated by plants directly from the atmosphere. It must first become chemically combined with another substance, before it can reach the roots of plants, forming *ammonia*, which consists of one part nitrogen and three parts hydrogen. Ammonia, which is volatile, readily combines with various mineral and vegetable acids, forming neutral salts, easily soluble in water.

This is an important fact, as it illustrates the manner in which ammonia reaches the roots of plants through the medium of manure. There is sufficient ammonia in rain water to contribute to the normal growth of plants, or in other words, a plant will produce seed enough to reproduce one of its kind. Farther than this, unassisted, it cannot go. If we wish to augment the quantity of seeds and fruit, for the benefit of men and animals, we must supply the roots of plants with an increased quantity of ammonia from some other source. The important fact which he wished, at this time, to enforce, was, that the chief value of barn-yard manure depends upon the quantity of liquid excrement, held suspended in the dung heap, and he proceeded to demonstrate this point.

The solid excrement of the horse is found to contain scarce a particle of ammonia in any form. It contains water—vegetable fibre, carbonate and phosphate of lime—phosphate of magnesia, and phosphate of soda. The solid excrement of a cow contains only one part in two hundred of nitrogen.

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That of the sheep is very little better, but when an examination is made of the liquid excrements, or urine of animals, it is found that there is a great quantity of *urea, lactate of ammonia, uric acid, phosphate and muriate of ammonia.* All these are compounds of ammonia. It is the basis of all of them. *Guano* is almost entirely made up of urate, phosphate, oxalate and carbonate of ammonia, and this explains its great power as a fertilizer.

The reason why we detect so great a difference in the solid and liquid excrements of animals, is accounted for on well known principles. It is a curious fact that *azote*, the basis of ammonia, is the chief ingredient in the muscular fibre of animals, as well as in the *gluten* of seeds, and as a matter of course it must be extracted from the digested food of the animals, as it passes the *tract* of the intestines, and becomes assimilated. The solid excrement, consequently, is almost entirely deprived of azote. It is important to observe that the liquid excrement is entirely of another character. It is probably known to gentlemen acquainted with physiology, that the animal economy undergoes periodically a complete renovation. Every part of the animal organism is taken up and carried off by means of liquid excretions, of which urine constitutes an important part, and new supplies furnished by the food which we daily take. This proposition commends itself to the common observation of all, when we observe that after arriving at our full nature, we daily require a certain quantity of food, which is taken up by the system, used, thrown off, and again another supply is taken, and this process is perpetually repeated.

And thus the very nitrogen that enters into the composition of muscle, is absorbed and carried off by the liquid excretions, rendering them so useful in their application to the growth and maturity of seeds. The beauty of the arrangement of Nature, in thus making plants and animals mutually dependent upon each other, is clearly shown. Animals cannot subsist without plants, neither can plants flourish without receiving back again the very elements which originally constituted a part of the animal.

From the foregoing facts, he deduced the importance of having the barn yard and stable so arranged as to preserve, as far as possible, every particle of the liquid excrements from all the animals they contain; and he would be glad to hear suggestions from farmers present, as to the most feasible method of accomplishing this object. He had heard it mentioned, as a method of fixing the volatile ammonia in dung heaps, of spreading a layer of gypsum and manure

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alternately. The gypsum is decomposed by the following process: the ammonia having a stronger affinity for the sulphuric acid of the gypsum, unites with it, forming sulphate of ammonia, which is soluble in water.

Although this subject has been hitherto much neglected, he hoped to see a far greater interest bestowed upon it by the farmers of the State, now that they had their attention turned to it. We cannot place too high an importance on saving manure in the best possible state.

> "When Earth is young, and yields us kindly
> Her fruits with little labor,"

we may perhaps dispense with manure; but time had already come, in some parts of the State, where the prosperity of the farmer *depends upon his economy of manure.*

Dr. Ward. Mr. Chairman—The philosophy of the operation of manures, as given us this evening, while they instructed and delighted, have awakened in me a desire to detail to this audience some experiments I have been making by way of carrying into practice the scientific principles of which we have had such an interesting exposition from the honorable gentleman from Monroe.

My attention was no sooner turned to the study of agriculture, as a science, than I became fully satisfied that the barrenness of our wornout lands was owing to the exhaustion of the mineral elements that enter into the composition of the plants grown; that this exhaustion results from always taking from the soil, in the crop, these mineral elements, without returning them back in the form of manures; that where the physical properties of the soil were what the agriculturist wanted, it was safe to enter upon the possession of any farm, however much exhausted, with a certainty, that under judicious culture, the land could be reclaimed at a moderate expense; for when an analysis of the soil had discovered to us the mineral elements that had been abstracted, by returning those elements, the land would at once be restored to its pristine fruitfulness. With this conviction, I entered two years since upon the possession of a farm that had been cultivated for more than a century, under a system so impoverishing, both to the soil and the owner, that the latter was literally driven from it for a livelihood; and in truth I can say, and without any exaggeration, that I have had expressed, the commiseration of my neighbors, for having entered upon the possession of one so much exhausted. Remembering that Belgium, once the poorest, was

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now the richest and most productive portion of continental Europe; that the Highlands of Scotland, once barren to a proverb, was now the garden of Great Britain; full of hope, I entered upon the experiment of restoring to fertility a worn out farm.

From my knowledge of disease, the operation of remedies upon particular organs, and consequently their adaptation to particular conditions of system, I could not honor the judgment of that physician, who would give the same medicine to all his patients indiscriminately, because they were sick; neither can I regard as most judicious the almost universal practice of giving to every impoverished *or sick field* the same manure; having no regard to its particular condition, or its lacking mineral elements. Ascertaining that the chemical substances requisite to the cultivation of a crop absent in my soil were *lime*, potass and the phosphates; and knowing that it was the want of these substances that has rendered barren large portions of all our old States, which were once regarded inexhaustible in their fertilizing elements, my first work to enter upon was to provide for their supply. As I had determined that a principle of rigid economy should govern me in all my expenditures, the simplest and cheapest form in which I could obtain them was from the lime kiln for one, from the *refuse boilings, spent ashes, and salt ley of the soap tallow chandlery, mixed with muck*, for the second, and to bone dust for the third. As nature had given me an abundant quantity near at hand in a valuable bed of muck, my practice has been to have a quantity of it thrown out during the autumnal months, and exposed through the winter to the action of the frost and rain, and as early in the spring as the weather would permit, have it combined with lime in the proportion of eight loads of the former to one of the latter. After four or five weeks it is fit for use, and in this form is applied to my corn, potato and grass crops, with the happiest effects.

I have found the leached ashes to act more readily in neutralizing the acid of the muck, and regard it fit for use in ten or twelve days after being composted. Chemical analysis having demonstrated the liquid excrement of the horse and the cow, as well as of human kind to contain more mineral salts than the residuum that makes up the fecal mass—or dung of the animal—and that these mineral salts gives to what are ordinarily termed manures, their value; it becomes an object of importance to the farmer to secure them, that he may return them to the soil for the growing crop.

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In Belgium it has long been the practice to do this by means of troughs arranged under the stalls, and leading to tanks constructed in the yard and from thence it is either pumped on the compost heap or conveyed in the cart, in its liquid state to the grass field, or by the hand to the growing plant. In some parts of our own country, particularly in the vicinity of Boston, cellars are dug under the barns, in which are contained the manure bed, that receive directly from the stalls above, the droppings of the animal. But as with us, and very properly too, all these innovations upon the agricultural routine of the country, are measured by a dollar and cent rule, the cost of their construction, added to the labor of their removal, which is money, will stand in the way of their general adoption, until the value of the liquid excrement can be demonstrated to our farmers. This demonstration would most readily be made, if reflection would but lead to experiment. What one of the manures, long used, has experiment proved to be as strong as *hen-manure?* The explanation is found in the fact, that the urine is combined with the fecal matter. And so of all the feathered tribe. Hence we can understand the worderful fertilizing properties of the *guano.* Would not wisdom dictate to us, the adoption of some means to save the liquids, and if either must be thrown away, let it be the fecal matter?

Again, as a large proportion of the weight, in most of the forms in which manure has been applied to the soil, was simply water, a plan that would precipitate the salts from the water in which it is held in solution, and give it to us in a portable form, requiring but little labor for its application, seemed desirable. To obtain this end, I had pits dug under each stall for the horse, the dimensions of which were five feet long, three feet wide, and two feet deep. These are filled with dry and pulverized peat (or muck) combined with sulphate of lime (gypsum), in the proportion of eighty parts, by weight of the former to twenty of the latter. Over this the floor is then laid, each plank being separated from its fellow a half inch or more, that the urine may readily pass through. A double decomposition takes place. The volatile ammonia of the urine, which would otherwise be carried away by the atmosphere, becomes fixed by the sulphuric acid of the lime, and a *sulphate of ammonia* is formed, a soluble salt, as well as a *carbonate of lime.*

In the spring of the year the floor is removed, the pit emptied and refilled; the mass is deposited under the shed to dry, and in that form is used, a handful to a hill of corn—applied at the time of the first hoeing. To aid in proving its fertilizing properties, I gave

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a quantity of it to a neighbor, who for many years past had been in the habit of using poudrette from the Lodi manufactory, with most satisfactory results. He has since said he could discover no difference in its effects upon his crop between it and the poudrette. But as to my own crop, and the mode of manuring adopted, I would say, my practice has been to put a shovel full of *muck* and *lime*, prepared as before stated, to a hill—on this the corn was dropped, and at the first hoeing a handful of the domestic poudrette was applied to the growing corn. The yield of full eared, well formed corn was large, but as it was not measured, I cannot state the quantity per acre. The yield on this same field the previous year, was extremely small, with very few, if any, well formed ears of corn, although it was that year manured with yard manure.

A notice in the daily papers of a tall growth of Indian corn, induced me to measure during its growth some of the stalks. I found twelve hills in two adjoining rows that measured twelve feet in height on which there set, six feet from the ground, two ears of well formed corn to a stalk.

My potatoes manured with muck and lime were very fine, abundant in their yield and large in size; and I am now supplying some of my neighbors with their seed potatoes.

The stalls for the cattle are temporarily constructed on beds of dried muck, which while it acts as an absorbent for the urine, is itself converted into a most valuable manure, the mineral elements which it contains in an insoluble state, are rendered available by the formation of neutral salts, the result of the union of the alkali of the urine with the crenic acid of the muck. The yard is also covered with muck in the fall, and, in the spring, it, with the litter and droppings of the animal, are thrown together in heaps under sheds prepared for that purpose, to protect it during decomposition from the action of the sun and rain. And so I might add in reference to human urine, as well as the solid excrement. A simple contrivance, which every farmer may adopt at a trifling expense, by constructing his privy with a drawer underneath, filled with charcoal dust, *dry peat and plaster*, or some other neutralizing and absorbing substances, will not only render the privy less offensive to the family, but being in a portable form is readily removed, occasionally, to the compost heap, thus giving him a night soil as rich in fertilizing properties as the guano of Peru.

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By these means I have found my resources very much augmented; and take pleasure in saying that the result of the experiment undertaken of restoring to fertility a worn out farm is thus far highly satisfactory.

Mr. PARSONS gave some interesting sketches of the manner in which the manure of cities is secured and prepared, and showed that it was of the greatest use as a fertilizer, and that any thing like prejudice against it was utterly misplaced, for that it could be collected and disposed of without any offensive results. This new and important branch of manures; important by its strength, but new to this country, though every where used in the agriculture of Europe, he commented upon, in so pertinent a manner, as to leave an evident impression that the value of this, now neglected, manure, would yet be everywhere conceded.

Mr. MCGONEGAL described the treatment of his own land, doubting whether it was ever profitable to the farmer to procure his manures from a distance, and concurring in the estimate of the value of the manures of the farm. His own agriculture had been his school of experience, and he had seen in its practice results obtained by the use of manures, which confirmed all that had been said of the duty of every farmer to see well to it, that the strength of the land was restored by good treatment, and not less by right plowing, than by manures.

The PRESIDENT was glad to see that the attention of the meetings had been for three successive evenings called to this subject. It was time that every where throughout the State, the farmer should see to it that he understood the value of his manures, the reason why they were valuable, and should understand how to increase their quantity. The day had gone by, when the agriculturist considered the manure in his barn-yard of such little value, that his chief care was to find the means of getting rid of it. Experience had proved that in doing so, he was warring with his wealth, that he was inflicting an injury on his land, the results of which would be felt in every year of his farming. The facts which had been developed by well and thorough made experiments had so tested the value of manures to the plant, that they had risen to occupy one of the highest places in the attention of agriculturists. It was the remark of one who had expended much time and money in the manuring of his lands, that it had always been a profitable expenditure; that for every dollar which he had paid out in procuring manure, he had in its results

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of increased fertility received two. The goodness of the crop may be said to depend on the quantity of manure used.

Mr. B. then reviewed the discussion of the evening, which had greatly gratified him. In the remarks of the Secretary (Mr. Johnson,) the attention of the meeting had been called to the subject, to discuss which we had assembled. Its relation to the best interests of the farmer had been succinctly stated, and its great importance to the farmer illustrated. The lucid and scientific exposition of the principles of sustenance to the plant, as derived from manure, had been ably given by the gentleman from Monroe (the Hon. J. B. Smith,) while the remarks of Dr. Ward had shown how usefully and harmoniously the principles of agricultural science blend with and become instrumental to successful agricultural practice. And so too with the remarks of Mr. Howard, Mr. Diven, Mr. Taylor, Mr. McGonegal, and the other gentlemen who spoke; all had enforced or illustrated some branch of this important subject.

The President next adverted to the superb work of Dr. Emmons on the Agriculture of New-York, a copy of which was in the Assembly Hall. He congratulated the farmers of New-York, that in the great Natural History of this State, so beautiful and well prepared a part had been assigned to them. He spoke of it as a volume creditable to the scientific man who had prepared it, and to the State who had authorized it.

April 8th, 1847.

The Hon. WM. C. HASBROUCK, Speaker of the House presiding. The subject for discussion,

FRUITS.

The Hon. Mr. MARKS of the Assembly, said he regretted that absence from the city had prevented him from making that preparation for this discussion, its importance demanded. He did not profess to be familiar with the scientific and technical terms, as applicable to the cultivation and kinds of fruit. His opinions and judgment had been formed from his practical experience; perhaps however, that was as good a school as any other on this subject, and he had from his youth taken a deep interest in the culture of fruits, not only because he liked the various delicate productions of the fruit yards, but as a matter of pleasure.

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He knew this subject was one, in which the whole community were interested, or at least should be, and many desired to know all that was essential to the culture of good, wholesome varieties of fruits, which contribute so much to the pleasure and enjoyment of life, and he was happy to witness the increased attention, that the community were giving to the best mode of cultivating, improving and increasing the kinds, quantity, and quality of these rich blessings.

He had for several years devoted considerable care and attention to the cultivation of these articles, and had found the labor well remunerated by its results, if not in net profits, it was in the rational enjoyments of the products, and the *pleasure* of sharing the richest delicacies of nature with his friends.

He proposed in his remarks, hastily to examine several of the varieties of fruit which he cultivates (near the foot of the Catskill mountains, in Greene county,) somewhat in the order in which they ripen, remarking, that for the last four or five years, there had been no time from the ripening of his earliest strawberries until the frosts of winter came, that he could not pick ripe fruit of some kind from his garden, or fruit yards, and that with a little care and attention, every farmer and resident of the country who had a little lot only, might do the same.

The simple and natural classification in which he would speak of them, would be of the strawberry, the currant, the raspberry, the gooseberry, the cherry, the peach, the plum, the pear, the apple, the quince and the grape. The cultivation of all of which was easy in most localities, and very desirable in all. He remarked in relation to the Ross Phœnix strawberry, which he had raised from half a dozen small roots, obtained with difficulty because of their scarcity, that the fruit was very large, and of good flavor, but not very prolific. The other kinds of red ones were also fine, as well as the white garden strawberry generally cultivated in bunches; he had tried the experiment of cultivating them in thick beds, and they had borne well, but not as sure. The increase of roots is rapid; from the half dozen roots of the Ross Phœnix, obtained three years since, he had now plenty; had found no difficulty in transplanting, and by taking up a small lump of earth with the root, early in the spring, they would bear the same season, or they might be set out in August or September; in short, he had found the cultivation of the strawberry easy.

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Currants could be raised early, as well as the raspberry, and could be kept fresh and good until late in the fall, if properly cultivated; and alluded to the fact, that too many neglected it, were content to let it grow up in large bunches, with grass matted round the roots; while his experience had shown him, that if so left the berry is small, stems of fruit very tapering, easily dried up, and would fall off early, flavor less rich, and would not ripen as early; while the same varieties, both white and red, by being cultivated in single stalks, would grow large and high, sometimes five or six feet, bear profusely, berry very *large*, stems very *long* and *full*, and the fruit *richer*, and would, if not disturbed, often remain fresh until frost came. The ground should be often hoed and kept free from weeds, and the bush staked and tied up, or if next the fence, tied to that, to produce these results, and to prevent them from bending over to the ground, when loaded with fruit, as his usually were. The black currant could also be added to the ordinary varieties of white and red, as it added to the pretty appearance of the dessert dish, and was by some also deemed very healthy on account of its stringent acid property; and the black Missouri currant also, was a fine flowering shrub, and tart black fruit, but he had not cultivated these as extensively as the other kinds.

As to the *Raspberry*, all were familiar with the Antwerp, the white red and yellow; all could be easily cultivated; but he found that the common black field raspberry was one of the most valuable for garden culture. He took from the adjoining fields enough for a dozen or fifteen bunches, of some five or six stalks in each, tied them up to stakes, and these he found afforded an abundant supply for his family, to mix with the currant and other dessert fruits, for weeks in the summer season. By placing parts of these bunches in a shaded or northerly exposure, they would ripen daily and gradually, and be of increased size and flavor, by garden cultivation; and each year new sprouts supplied the place of the bearing ones, which die in winter.

Gooseberries of different varieties come in about the same time, and if properly attended to, during quite a long season, may be used for pies, the dessert or daily use. The worst difficulty he had found, was, that pestilent blight, called mildew. He mentioned however, that he had some years since obtained some bushes from an old gentleman from Scotland, who brought them with him, a fine, large, straw colored fruit, had always borne well, until last year, when the mildew attacked them. He spoke of his manner of thorough trim-

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ming, did not suffer surplus shoots or sprouts to remain on any kind of small fruits, and particularly recommended trimming gooseberries, and cultivating young bushes from layers, as least likely to mildew; could find no positive remedy for this blight, but soap suds; brine, &c., was good, and alluded to the recommendation of a writer in the Horticulturist, to surround the bush with salt hay, or common hay soaked in brine. He named several varieties of gooseberries that he had cultivated, which he obtained of Mr. Thorburn, imported from England, as valuable varieties, such as the "roaring lion," "King William," "smiling beauty," and "white swan," all very large. The roaring lion in particular, color purple, he had raised them three and a half by four inches in circumference; spoke of a description of it which he saw in the London Penny Magazine, taken from an account of a Scotch "gooseberry show," held some 200 years ago, in which this berry was described; and spoke of the mode the Scotch had of increasing the size by "nursing, or feeding them," as they called it, with sweetened milk and water, by hanging under the berry a little cup, or half an egg shell, so that the end of the berry might just dip into the water. He had found that the berry could be thus increased in size as a curiosity, even to bursting, but the flavor was diminished. To prevent single currant stalks, or goose-berries from sprouting near the root, the eyes or buds should be cut out near the bottom with the point of a knife; this is the English mode of preventing sprouts from goose-berries.

Mr. M. examined the various varieties of *Cherries*, such as the May Duke, Morello, Black Heart, Ox-heart, Black and White Tartarian, Bigarreau, and the Elton or Elkhorn, and other varieties which he had cultivated; though several of his varieties above named, had not yet come to maturity. He found the Elk Horn a fine, large, dark colored, and hard meated cherry. All the above varieties were good, easily cultivated, and with the common varieties, adding to the other kinds of fruits above named for quite a long season.

Peaches, he had cultivated successfully for some years; first obtained some select varieties from Long Island, and from these had budded young trees grown from the pits, so that he now had some twenty varieties in bearing condition, and two years since was enabled to exhibit fifteen varieties at once, at the Greene county Agricultural Fair. He recommended highly, the early Red and Yellow Rare-Ripe, the early and late Malocatons, the Old and Free mixons, George the Fourth, the President, the Green Catherine, Wash-

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ington, Morris White, and others, varieties that ripened from August to October, producing a fine succession of this most delicious fruit, to mix with the early and other continually ripening fruits of the season, such as pears, plums and apples.

In answer to an interrogatory from the chairman, if he had forgotten the Apricot, Mr. M. answered, that he had tried them, they blossomed fully, but he had been unable to ripen any, the fruit invariably falling off before coming to maturity. He could not account for the cause, but had given up trying to raise this or the Nectarine. He urged the necessity of budding the earlier varieties of peaches, into seedlings raised north, so as to have the fruit ripen before the early frosts, to which we were liable in this region; and also adding, that trees thus raised, were much hardier and less likely to be killed by our hard winters, than those first started farther south; and mentioned a fact to illustrate this opinion, to wit, that in one winter, when the thermometer where he resided, sunk as low as 15 degrees below zero, he lost eight fine bearing trees, seven of which were out of twenty-five, purchased from Long Island, while only *one*, was out of a much larger number, which were about the same size, of his own rearing. He suggested that one of the greatest difficulties in securing regular crops of peaches in this northern region, was their liability to start into blossom too early, and consequently liable to have the fruit "nipped in the bud" by late spring frosts; to prevent this, he had for several years, in February or March, packed or stamped the snow around the roots of his peach trees, some three feet each way, and covered this with coarse straw manure, or by a covering of rye straw, which being a non-conductor of heat, kept the frost in the ground often until May, if desired, and thus kept back the bud until the danger of late frosts was past; and though this might perhaps prevent the varieties from ripening as early, yet by raising the earlier varieties, the season was amply sufficient to ripen and perfect the fruit, such varieties as he had named; and he had not, since he had adopted this practice, failed a single year of having a fair yield. His experience as to protecting the peach tree from the yellows, and the grub, had furnished him with no certain cure, except, that close watching and a sharp knife, would easily find and destroy the dangerous ravages of the grub, the presence of which could always be detected by the bunches of gum at the root of the tree, the grub being always to be found near, working under the bark.

The *Plums*, he spoke of, as sure and profitable fruit for market, and for use, had found the Red Magnumbonum, the Green Gage, Im-

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perial Gage and Bolmors Washington, Egg, and several other kinds easily cultivated, though he had found the Imperial Gage and Bolmors Washington, more liable to rot than the other varieties named, especially in damp and warm seasons; would give the preference to the Green Gage for a market plum, on account of its hardiness, and longer continuance on the tree. He had found no remedy against the black gum, or knots, that often destroyed plum trees, except the saw and pruning knife; cut and burn was his remedy, even if the remedy had to come down to the root of the tree; but he was not troubled with these knots except upon a very few of the common blue plums. All of his large varieties, grafted or budded, not having been troubled with them; he recommended good cultivation about plum trees (as well as other kinds of smaller fruits) as a means of increasing both the size and flavor of the fruit; stated that he had found in some instances, the Magnumbonum plum six inches in diameter, though not averaging that size.

Of *Pears* he had cultivated several varieties, some very early, and some late winter ones; one kind of winter ones however, which he found upon his premises, he had sawed off, and grafted in the Seckel, because he found the winter one neither fit to eat or cook, and tough and tasteless enough in winter to choke a man, and if kept 'till spring, they would choke his pigs. He found the pear to be easily propagated by grafting, if upon young thrifty trees, often bearing the second or third year, and fruit generally increased in size, especially some Seckels, which he substituted for the poor winter pears, and which grew nearly one-third larger than he had ever seen in market. He named the Bartlett, the Virgalieu, the Beurré Diel, Marie Louise, and other varieties as very fine pears, though his Beurre Diels and French varieties had not yet commenced bearing, so as to allow him to speak so confidently from experience, as to their productiveness and value. But of the Seckel and Bartlett he could say they were excellent, and good bearers; the Seckel bearing early when grafted, and the Bartlett always bearing early, when the trees are small, and named an instance of a Bartlett bud, set in a quince sprout from the root of a quince tree, which branched into two small limbs, not yet over four or five feet long, which bore ten pears the third year, fifteen the next, and last year between fifteen and twenty fine, well matured pears.

Mr. M. spoke of the *Apple*, also of the ease of its cultivation, its productiveness, and the numerous valuable varieties, naming several of the most valuable kinds, among which were the Spitzen-

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bergs, the Greenings, Swaars, Seek-no-furthers, Northern Spys, Gilleflowers, and some other varieties, names not known to him. A basket full of fine specimens which he had brought and distributed, to prove the truth of his assertions, that good fruit could be raised by all who would take the pains. He spoke of the new Spitzenberg as a very handsome and valuable apple, as well as several of the kinds of Pippins. Also spoke of the value and importance of cultivating the apple, not only as a rich and healthy family delicacy, but for market, both at home and abroad, and of the value of the poorer kinds, or bruised, defective, or surplus ones, as a valuable vegetable for hogs, horses and even cattle, and detailed experiments he had made in using them for years, to fatten hogs.

The *Quince* he had found from experience, would grow much larger, and bear more prolific, by being cultivated in single trees, and notwithstanding their slow growth, some that he had transplanted from six to ten years since, had borne for two or three years, very abundantly, very large and fair; several last year, notwithstanding the drought, weighing from thirteen to sixteen ounces; they were of the kind called apple quince. They flourish well in the somewhat gravelly clay soil of his garden, upon a hardpan subsoil, but they could not be cultivated on the rich loamy soils of Schoharie flats, or the higher colder regions of the Catskill mountains.

As to the *Grape* he had found no difficulty in cultivating the Isabella and Catawba; had plenty every year; covered neither of them; Isabella the earliest and surest, though Catawba had ripened well for three years past. His Sweet waters had been much troubled with mildew, especially old vines; generally trimmed his vines; had left vines, and in one instance a whole arbor, entirely untrimmed as an experiment and they bore profusely the next year, but a long neglect would soon accumulate too many vines, and prevent fruit from being abundant or large. Had tried some experiments in preserving grapes laid in cotton batting and boxed up, kept well last year; some kept until April.

Mr. MARKS apologised for occupying so much time and said, that he perhaps ought also to apologize for alluding so often to *himself* in his remarks, as they might be deemed a little egotistical, though he had sometimes thought, if writers and speech makers would theorise and speculate *less*, and write and talk *more* of their *own* plain practical experience, and *self* known facts, their readers and hearers would reap quite as much good as from more elegant essays, and eloquent addresses.

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Judge Cheever (of Saratoga) did not believe that the recital of his experience would benefit any one, unless it was rather as a beacon to be avoided, for he had been peculiarly unfortunate in his efforts to grow fruit. He could see the causes of his failure in the existence of two very large elm trees, of several feet in diameter and with enormous branches at the top. It was out of the question to propagate fruit in the neighborhood of these elms; the fruit trees under the influence of their shade, keeping from them all the best influences of sun and air, diminished in growth, and increased in barrenness. The very trees seemed to recognise this, for they presented their limbs in an opposite direction, stretching as if to get away from them; plums, cherries, pears, all failed. The elm is no friend to fruit trees, whatever it may be to forest trees. It is a sure fact, that we must go without fruit, or cut down the shade trees, and this he did not like to do. He had some lingering veneration for antiquity, and these trees were relics of other times.

Mr. C. described the geological characteristic of the soil which composed his farm, which was alluvial, being on the banks of the Hudson. He had succeeded tolerably well in making an orchard grow, but though he had bestowed considerable labor on the culture of the pear he had not been successful. The pear tree grew, but it was to wood, not fruit. His orchard trees had been attacked by the mice. In one winter he had nearly 200 trees girdled by them, and to remedy this evil he had adopted a variety of the cures which had been suggested, and amongst others coal tar. Unhappily the tar was almost as bad as the mice, and killed more than it cured. It seemed a kind of unhappy choice for the poor trees, between famine and pestilence.

Mr. C. went on to point out the advantages of cultivation in regard to fruits as well as for grains, and maintained that the trees situated where the soil was broken up around them, and manured and irrigated, would always prosper better than those where the sod was left compact and unbroken. The same laws of cultivation applied to one as to the other. In both the quality and the quantity of the product would be the best testimony to the value of the culture.

Mr. Howard, after congratulating the meeting on the success which had attended the discussions heretofore held, and on the liberality so intelligently shown by the House of Assembly in allowing the use of the Hall for this purpose, offered the following resolution.

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Resolved, That the establishment of agricultural meetings for the discussion of subjects appertaining to practical farming, is highly useful, and we recommend that meetings of this character be held during the sessions of the Legislature hereafter.

Which resolution was unanimously adopted, and the Secretary of the State Society (Mr. Johnson) alluding to the fact, that the increasing business of the Legislature prevented many from giving to the meetings the attention which they desired, moved an adjournment.

And the meeting adjourned, *sine die*.

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TRANSACTIONS OF COUNTY SOCIETIES FOR 1846.

Reports have been received from forty-seven county societies, being the whole number of organized societies in the State. The returns from many of them are full of interesting and valuable matter, and give assurance of the onward progress of the agricultural interest throughout the State. There are but twelve counties without a society, and it is presumed, several of these will have efficient organizations the present year.

A cordial co-operation on the part of the State and County Societies, will contribute much to the success of their efforts, and it is desired that the county societies, adopt the same regulations in regard to field crops, as are required by the State Society, so that an entire uniformity may be had, in the measurement and weight of crops entered for premiums.

ALLEGANY COUNTY.

Angelica, 31*st Dec.*, 1846.

To the Executive Com. of N. Y. S. Ag. Soc.

Gentlemen—The Annual Fair of the Allegany County Agricultural Society, was held at this place on the first and second days of October, and considering there was no other inducement but the fair to call the people to the village, there was a numerous and respectable attendance. There was an increased number of the various kinds of stock of more excellence than at either of the previous fairs. The crops of every kind (except potatoes) have exceeded in quantity and quality the crops of any previous year since the county was settled, in the opinion of those most competent to judge.

The dairy business is pursued by many farmers in the county with skill and profit, and with regard to quality, I have never seen better butter or cheese at either of the State Fairs which I have attended. The articles of domestic manufacture presented, were not as numerous as at the Fair of 1845, but those exhibited were

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not inferior in taste or skill to any former specimens. The amount of premiums offered in the spring was about $250, but owing to several circumstances, the awards fell much short of the amount offered. The Society suffered a diminution of its members from the fact that an individual, as is generally believed, obtained the four highest premiums on field crops in 1845 by false statements. The executive committee in order to prevent any thing of the kind this year, published rules in relation to the measurement of the land and crop more difficult to evade; the result was, that at the meeting of the committee, there was but one applicant who came within the prescribed rules; of course but one premium was awarded, where thirty had been offered. It is the opinion of those best informed that the society has exerted a beneficial influence upon the productions of the county, as to quantity and quality, far exceeding the most sanguine expectations.

Respectfully yours, &c.,
LAURENS HULL,
Prest. of Allegany Ag. Soc.

BROOME COUNTY.

Statement of the proceedings of the Broome County Agricultural Society for the year 1846.

President, Levi Dimmick. 11 Vice Presidents, one from each town. Secretary and Treasurer, Jacob Morris.

The Annual Fair of the society was held in the month of October, at which fair was awarded in different premiums, the sum of one hundred dollars in money, and a number of the volumes of the Transactions of the State Society.

The first premium on winter wheat, was awarded to the Hon. O. C. Crocker, the amount raised being fifty-six bushels on one and three-quarter acres. The manner of tilling the land is particularly mentioned in the accompanying copy of Mr. Crocker's certificate.

The first premium on corn was awarded to Austin Willcox; the produce being 143 bushels of ears to the acre, the whole piece containing four acres. "This crop was raised after wheat; the ground "was plowed once in the spring after being manured, the corn was "also manured in the hill with stable manure; the corn was twelve "rowed yellow corn, and was raised on the river flat, in the town "of Vestal, in this county."

Some very handsome specimens of sewing silk were exhibited by Mr. Lewis Tyrrell, of Union, in this county, which was raised and manufactured by himself.

The attendance at the fair was small, and the number of cattle and other animals exhibited very limited, in comparison with some

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former fairs, and with but few exceptions, the animals exhibited did no credit to our farmers.

Our farmers do not take that pride and interest in the society that is desirable. We have not received the Transactions for 1844 and 1845, although we sent for them long since through the State Society. As we have awarded them as premiums, we are desirous of receiving them as soon as practicable.

The statement of Hon. O. C. Crocker, as to the manner of cultivation of his land for wheat is annexed.

Respectfully yours,
JACOB MORRIS,
Secy. and Treas.

Winter Wheat——O. C. Crocker's Statement.

The land on which the wheat grew contained one and three-quarter acres. It was at least one-half covered with Canada thistles. It was plowed five times in the hottest part of the season. The product was fifty-six bushels and a few quarts. This was the first crop ever raised upon the land.

CATTARAUGUS COUNTY.

Report of the proceedings of the Cattaraugus Agricultural Society, for 1846.

In June the executive committee held a meeting and made out a list of premiums, amounting to $190. The Annual Fair was held at Ellicottville on the 30th of September, and was better attended in point of numbers, by all classes and a greater increase in numbers and goodness of stock of all kinds, and of domestic productions by far than at any previous fair held in the county. It was a general remark by every one, that they were surprised to see so many good animals presented, and that they could scarcely believe that there were as many in the county. Since the organization of the society there has been a decided improvement in cattle, horses, and sheep, at least fifty per cent. and owing too, wholly to the influence of the society. Our farmers are getting to feel that it is for their interest to improve their breed of cattle and to keep them better, and where it has been done with a view of presenting them at the fair for competition, they have been amply paid; and as an instance of this, in 1845 a young farmer had taken a little extra pains with a pair of yearling steers and presented them at the fair in the fall and received the first premium; he kept them well during the winter and sold them in the spring for $45, which, had it not been for this *little* care which he had taken of them, he could not have obtained over $20, being an increase in amount of $25.

The annual meeting was held on the 30th of September. Samuel Hawley of Mansfield, was chosen President. Richard Wright of Humphrey, Vice President. Daniel Reed Wheeler of Ellicott-

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ville, Secretary and Treasurer. John C. Devereux of Elllicottville, Nathaniel Walker of Mansfield, Alexander Chambers of Great Valley, and Oren M. Seward of Franklinville, Executive Committee.

Field Crops.

Statement of Lyman Dewey of Otto, to whom was awarded the first premium on corn.

Raised from one acre 111¼ bushels of corn of the Dutton kind, weighing 59 pounds to the bushel. Raised on land which had been in meadow for five years; broke it up the first of May; dragged it well; spread on it eight loads of barn-yard manure; dragged and furrowed it; manured it in the hill with ten loads of hog manure; planted the 16th of May, rows two and a half feet apart, and hoed it twice.

Mr. Dewey had another acre from which he got 104 bushels, weighing 59 pounds to the bushel; wheat raised on it the previous year; planted the ninth of May; spread on it eight loads of manure and plowed it under; planted it the tenth of May; hoed it but twice.

Peter M. Stonebreaker raised from one acre 77 1-10 bushels; previous crop potatoes; did not manure at all; hoed twice; planted the 17th of May.

Wm. Cooley of Franklinville, raised 72 bushels 3 pecks and 3 quarts from one acre; Land plowed in the fall; furrowed and manured in the hill; hoed three times.

A. T. Low of Franklinville, raised from one acre 78 bushels and 3 quarts of oats, weighing 34 pounds and 15 ounces to the bushel; to whom was awarded the only premium on oats. Previous crop wheat; not manured.

DANIEL REED WHEELER,
Secretary.

CAYUGA COUNTY.

To the Executive Com. of the N. Y. State Agricultural Society.

The general interests of agriculture in this county have been prosperous the past year. With few exceptions, whatever has shared in the efforts and labors of the husbandman, has given a very satisfactory return. The season has been so propitious, that in all cases of proper cultivation, the farmer has reaped a large, a *rich* harvest of wheat, corn, barley, oats, hay, beans and buckwheat; owing, undoubtedly very much to the season. Our crop of flaxseed and peas are somewhat below an average yield; and over the most of our county the potato crop is greatly diminished by rot, although there are many good crops, and probably all have been able

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to save an ample supply for family consumption of excellent potatoes, even from those fields where they were most affected.

What is the cause of potato rot I will not undertake to say; but I am satisfied from a somewhat careful attention to my crop, that something occurred about the latter part of August which affected the potatoes, some more, some less, according to circumstances, and that that something ceased to affect them injuriously after a very short time, leaving many sound and sweet in the same hill with others entirely decayed. An increasing interest in agricultural improvement is manifested throughout this entire county. The farmer is becoming more systematic; he regards more intently the importance of arranging his houses and out-buildings, more for convenience than for show, and in building he regards durability more than formerly. Much good taste is shown in laying out farms and fixtures, while at the same time a corresponding attention is paid to the rearing of stock. Many farmers interspersed through the county are greatly entitled to much praise for their care and efforts in cultivating the best breeds of horses, cattle, sheep, swine, &c. &c. One obvious proof of growing interest is seen in the fact, that there is now left but here and there a slovenly —— (I know not what epithet is appropriate,) who pours into the beaten track of the highway, the seed of his foul weeds, of which he raised large quantities yearly, to be carried upon carriage wheels and horses hoofs to every farm, the owner of which has the misfortune to pass over it with his team.

The Cayuga County Agricultural Society, held its Annual Fair and Cattle Show in the town of Venice, September 10th and 11th. Notwithstanding we had reason to apprehend a diminished interest in the exhibition from the opinion universally held, that the State fair, which was to come off in a few days in our own county, would be very much superior to anything to be seen at a county show; still we were not left alone; the number of persons who attended, it was thought, were as numerous as at any former show; there were one hundred and seventy-three animals entered for premiums; thirty-nine specimens in other departments, besides fruits and vegetables; there were seventy-nine cash premiums awarded, besides thirty-three volumes of the State Transactions and agricultural periodicals.

A large audience listened attentively to a practical address from Professor North, delivered in the open shanty erected in the show-field. The speaker showed most clearly that it was, in the present state of our country, very unwise for central New-York to be exhausting her strength in applying her labor to the production of a surplus of wheat, while the West could, and would, ever hereafter, fill our markets at a lower price than we can possibly produce it. He showed by facts and arguments, that a better system for the farmers here, was to produce our surplus for market in the shape of butter, cheese, beef, mutton, wool, and whatever would induce the more limited use of the plow, and tend to the production of more

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manure to be returned to the soil to increase its fertility; that although less money might be received by the farmer the first year, still in a term of successive years, the returns would considerably exceed what they will be from the plowing principle. He gave us lessons of great practical utility, and I trust, we who had the pleasure of hearing them will also reap the profits to accrue by acting in accordance thereto.

The society is now prosperous, and it is hoped that the great show at Auburn will awake more interest in its favor; that it will do more and more for improvement hereafter.

E. W. BATEMAN,
President.

An adjourned meeting of the Cayuga County Agricultural Society was held at the Western Exchange on the 13th day of February, 1847.

The report of J. C. Derby, Esq., Treasurer, was then received. Balance of funds on hand January 1, 1847, $167.87.

Crop of sugar-beets, raised by Joseph F. Osborne, of Mentz—land, sandy loam; quantity, one acre and fifteen rods; product, 794 bushels; value, $99.25; expense of cultivation, and harvesting, $30.31; net, $68.94.

Committee on sheep and dairy management, reported the sheep of E. W. Bateman, with a statement of the manner of their keeping, houseing, pasturing, clipping, &c., indicating superior management and a profitable result. The first premium was awarded to Mr. Bateman.

Committee reported a crop of carrots, raised by Ira Hopkins, averaging at the rate of 711 bushels to the acre. Land, sandy loam; manured with stable litter, and leached ashes; crop abundant and profitable. The first premium was awarded to Mr. Hopkins.

Committee reported an acre of field corn, raised by Joseph F. Osborne, of Mentz. Product, 113½ bushels; stalks, pumpkins and turnips worth $6; aggregate value, $62.75; expense, $16.39; net, $46.36. The first premium was awarded to Mr. Osborne.

Officers for the ensuing year:

President, Chester Gridley, of Sennett. A Vice President for each town and an executive committee. Recording Secretary, B. F. Hall. Corresponding Secretary, J. B. Dill. Treasurer, J. C. Derby.

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CHAUTAUQUE COUNTY.

December 30, 1846.

To the Executive Committee of the New-York State Agricultural Society.

Gentlemen—Our late Annual Fair was held at Mayville, in this county, on the 23d and 24th of September last; premiums to about $300 were awarded and paid. I herewith send you reports from some of the most meritorious cases where premiums were awarded. The interest heretofore felt in these annual exhibitions still continues. It has been the practice of our society since 1841, to hold our fairs in different parts of the county, giving, as far as is practicable, the opportunity to every one to enjoy the advantages resulting from these associations; this course, so far as our county is concerned, works extremely well, and I have no doubt that to this fact may be attributed the present standing of our society. In the election of officers, we have in view the place where the next fair is to be held, giving to that section the greater proportion of the officers, and consequently a larger share of the responsibility in conducting the same.

Our society has never yet offered a premium on the best improved farm; in our large county they have doubtless been deterred from doing so, in part on account of the great labor which would devolve on the committee to be charged with the visitation of farms which should be offered for premium.

It has occurred to me, that under our system of holding fairs, we might divide our county into four districts or sections, giving to six of our twenty-four towns an opportunity each year to have their farms viewed for premiums; in this way, the labor of visitation would not be great.

At our late fair we had several gentlemen on our committees who were not members of our society, and I have no doubt it this practice should more generally prevail, it would inspire greater confidence in the correctness of the decisions of committees.

Our next fair is to be held at Westfield.

The following officers were elected for 1847, viz:

Caleb O. Daughady, of Ripley, President. Adolphus F. Morrison, John Upham, Harmon Covey, Elisha Norton, Morbin Prendergast, Norman Kibbe, Jonathan S. Pattison, Selden M. Ely, Chauncey Warren, John Chandler, Timothy Judson, Otis Skinner, Judiah E. Budlong, and Daniel Williams, Vice Presidents. George Hall, Westfield, Treasurer. Hiram A. Haight, Westfield, Secretary.

G. W. PATTERSON, *President.*

Corn.

The following is the description of the land and the manner of cultivation pursued by Jabez Burrows, in the raising of corn, from one acre of which he harvested 114 bushels and 32 pounds of shelled corn.

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Manner of cultivation.

An old pasture well turned over the latter part of May, then rolled down well—drew on about 20 wagon loads of barn yard manure spread and well harrowed in—marked out the rows three feet apart, by fastening four chains to a pole carried by two men; planted on the last day of May, 16 to 18 inches apart, three kernels in the hill, of the eight rowed yellow corn—harrowed between and hoed twice. My object in planting the yellow corn, was on account of the lateness of the season. I have a kind of corn, called at the east the Brown corn, of a flesh color—the seed I procured from Boston; it is a large kernel and small cob, and very productive. My reason for not planting was fearing it might be too late, though rather an early kind.

JABEZ BURROWS.

Premium Wheat.

The following is the description given by George Hall, of Westfield, of the manner of cultivating the wheat on which he obtained the first premium for the county. The amount of manure, &c., mentioned, was not to the single acre, but to nearly 4 acres, and the wheat was the average for the whole four acres. Yield, 39 13.32 bushels per acre.

The wheat field was old pasture, turned under in May and June —soil, gravel—15 loads of dung, 10 loads of leached ashes and 4 loads of coal dust spread on the field, the ashes and the coal dust on sections by themselves—no difference to be perceived in the wheat at any time—plowed twice, and dragged four times—sowed the last day of August—the seed wheat, white flint, 2 bushels per acre.

G. HALL.

Elam C. Bliss, first premium for best one-eighth acre carrots; 194¼ bushels. 10 loads manure; soil, gravel loam; sowed 27th April; expense $11.31.

CHEMUNG COUNTY.

The Annual Fair and cattle show of the Chemung County Agricultural Society, was held at Horse Heads, on the 1st and 2d days of October, 1846.

As is usual with this society, the first day was occupied in the examination of all animals and articles offered for premiums. The second day, the plowing match, the address, declaration of premiums, and election of officers.

There was a marked improvement in the stock exhibited, particularly in cattle. There were many of the improved Durhams, and crosses from that breed and Devons and native breed; the crosses

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and native breed most generally took the premiums. Our committees judge the animal without reference to the herd book for its blood. It may be proper to state, that some of our best breeders and judges of cattle are opposed to putting Durhams in the first class of cattle, and that opinion is gaining ground with us.

In grain crops, the samples exhibited were numerous, the quality excellent, and the yields large, particularly in wheat, corn and oats.

In the root crops there was a falling off, particularly in potatoes; the latter having been more or less injured by the rot during the past season.

The agricultural implements and productions from the mechanic shops were creditable; some improvements were noticed in this department.

In butter and cheese the competition was great, and the quality most excellent; our dairymen claim that there is no better butter made in the Union than in Chemung county.

The exhibition of fruits and household productions greatly exceeded that of any former year; the variety and kinds of apples may not have been as numerous, and perhaps the same remark might apply to peaches and pears, but the quality, size and quantity exhibited greatly exceeded that ever before offered at our fairs, and by good judges admitted to exceed those exhibited at the State Fair at Auburn.

On the whole, our society is improving, its usefulness generally admitted, and our members increasing. Our finances stand as follows:

Cash on hand as per report of last year,		$11 47
" received from members,		68 50
" at the door of the exhibition room,		2 53
1 Vol. Transactions sold,		1 00
Received from the State,		62 00
		$145 50
Premium list and expenses paid,	$139 00	
Paid for binding 20 Vols. Transactions,	5 00	
Cash on hand,	1 50	
		$145 50
Premiums paid in silver plate or money,		$88 00
" " Vols. of Transactions,		18 00
Total premiums awarded this year,		$106 00

For the first time we have this year tried the experiment of paying a part of our premiums in silver plate, such as table and tea spoons, butter knives, &c., each article marked "premium from the Chemung County Agricultural Society." This experiment has not been sufficiently tested with us to speak confidently of its effects, but it is believed that if the premiums on all household productions,

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including butter and cheese, (and I see no reason why fruits might not be included also) were paid in plate, marked as above stated, it would beget in families a desirable spirit of emulation and competition, each to possess themselves of these evidences of their skill and industry; and what is more desirable, premiums of this kind always remain in the family, to be seen daily by all who visit them; this fact not unfrequently wakes up a desire in other females in the same neighborhood, to see that if through their skill and industry, they too may not rejoice in the possession of like rich gifts, and all this will be followed by a feeling, who among them will obtain the greatest number of these premiums.

All articles of household productions should be entered for premium in the name of some one of the ladies of the family that produced them, and the premiums should be paid in silver plate and neatly marked as suggested; if paid in money, it not unfrequently finds its way to the pockets of the husband or head of the family, and that is generally the last evidence to that family that a premium has been awarded to them.

The competition at our plowing match was not as spirited as on some former occasions. After the plowing match, an able address was delivered before the society by A. S. Diven, Esq., of Elmira, when the report of the committees and declaration of premiums were announced; after which, the following officers were elected for the ensuing year:

Charles Cook, of Havana, was re-elected President. John Holbert, John L. Smith, William Hoffman, James Hughson, Reuben Tift, John H. Beers, John C. Thayer, Doct. Chase, John A McKey, Vice Presidents. George W. Back, L. S. Post, Charles Hulett, Joseph Livesay, T. S. Frost, John Crawford, Sidney S. Decker, Hiram White, John Stoddard, Daniel Lang, Executive Committee. A. J. Wynkoop, Chemung, Corresponding Secretary. W. T. Post, Elmira, Recording Secretary.

It is believed that to aid in the developement of the agricultura resources of our State, and in accomplishing what is most desirable, the establishment and encouragement of agricultural education is all important. While in every other department the student is prepared by studies adapted to his pursuit in life, the farmer has been passed by as if there was no necessity for improving his mind, and opening up to him the world of science so rich with matter adapted to his wants. We would urge, therefore, upon the consideration of those who have these things in charge, that while they are providing for others, they also bear in mind the great interest of our State, the agricultural. Introduce the study of agriculture into our common schools; our children will thank you; with eagerness will they enter into an examination of the world around them, its soil, its plants, its fruits, its trees, its grasses, and let our academies be directed to establish an agricultural department, and if need be, let higher schools and experimental farms be established, so that the sons of New-York need not be sent to the old world to prepare them-

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selves for usefulness in the new. We trust the time is not far distant when science and practice combined, will enable our farmers fully to develop the resources of our State, and exhibit to the world the beneficial results of right attention in every respect to this most important pursuit, the foundation of all our prosperity as a nation.

CHARLES COOK, *President.*

Havana, March, 1847.

Field Crops.

G. W. Buck, winter wheat, 34 bushels per acre.
W. Worden, " 33 4.60 "
S. S. Couch, oats, 5½ acres, 69 "
" on one acre, 80 "
Joseph Livesay, potatoes, 266 "

Statements as to cultivation.

G. W. Buck, winter wheat. Raised on pine plain land, light soil, red clover sod, having lain two years; a covering of coarse manure, about 25 loads to the acre was applied; wheat sown the 14th of Oct. Three acres 47 rods; yield 102 bushels; variety sown, Hutchinson wheat.

W. Worden. Measured one acre, and the yield was 33 $\frac{4}{6}$ bushels, weighing 60 pounds to the bushel. The land had laid to pasture six or seven years. Plowed in July; no manure for the last six years; wheat sowed the 28th of August.

Oats.

S. S. Couch. Five and a half acres, on which was raised 380 bushels; ground broken up the previous fall, rolled and harrowed in the spring. The ground had been in pasture three years; soil clay; the oats were plastered after they were up.

CHENANGO COUNTY.

This society owes its origin to the act "to promote agriculture," passed by the State Legislature, May 5th, 1841. Under this law the annual sum of one hundred and twenty-two dollars was apportioned to the county of Chenango, under certain conditions which were complied with by the formation of a county agricultural society, and the collection of upwards of one hundred and twenty-two dollars as fees for membership.

To form the society, a meeting of citizens of the county interested in its objects, assembled at Washington Hall, in Norwich, on the 27th day of January, 1846, and organized by the election of Edmund G. Per Lee, as chairman, and Augustus Sanford and Hascall Ransford, as secretaries.

A committee of five was appointed to draft a constitution, con-

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sisting of Abraham Per Lee, David E. S. Bedford, Augustus Sanford, of Norwich, Calvin Cole, of Oxford, and Demas Hubbard, Jr., of Sherburne, who in due time reported a constitution, which was adopted by the meeting.

The constitution having been signed by a large number as members, they proceeded to elect by ballot, officers of the society for the first year, and the following persons were chosen:

Abraham Per Lee, of Norwich, President. Richard W. Julian, of Bainbridge, Calvin Cole, of Oxford, John Harris, of New-Berlin, Demas Hubbard, Jr., of Sherburne, Russel Case, of Smyrna, Benson H. Wheeler, of Pharsalia, David McWhorter, of Pitcher, Vice-Presidents. Charles York, Treasurer. Augustus Sanford, Corresponding Secretary. Hascall Ransford, Recording Secretary. And a board of managers of one member from each town in the county.

The society held its first fair at Norwich, on the 15th and 16th of October; and the exhibition was such as greatly to cheer the hearts of those who are interested in the improvement of the agriculture of the county. The society adopted regulations which were well calculated to secure correct and useful returns, and the future history of the society, we doubt not, will place it among the most efficient organizations in the State. We select from among the papers returned, the following:

Report of Committee on Farms.

The committed have viewed the farm of Col. Ezra Hewitt, situate about one quarter of a mile from the village of Norwich, north, on Main-street, on a rise of land. The farm consists of about fifty acres of land, and has a beautiful and convenient dwelling house, located near the centre of the farm. The outbuildings are convenient, and are placed in the rear of the dwelling house. The farm is in a high state of cultivation, and admirably well fenced; is divided into lots suitable and convenient for its profitable cultivation, consisting of tillage, meadow and pasture lots.

The products of the field crops upon the farm, exclusive of pasture, is estimated at five hundred dollars, at present prices. The expenses for labor in managing the farm amount to $75.00, exclusive of board.

The committee are unanimous in the award of the first premium to Col. Hewitt, for the best farm.

CALVIN COLE,
JOHN R. MINOR,
MATTHEW RANSFORD,
Committee.

Dated October 16th, 1846.

Indian Corn—D. M. Wakeley's statement.

The soil was a sandy loam, which had been in meadow for several years. Plowed on the 11th of April, and laid until fitted for planting, at which time drew on a light coat of fine manure, spread

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on the surface and dragged it thoroughly ; marked it both ways for planting. North and south, I marked the rows 3 feet 3 inches ; east and west, part *the same distance*, and part 2 *feet* 2 *inches from row to row*.

In order to estimate the amount of corn upon the acre, and the difference between the *thick and thin planted*, I engaged Mr. T. Cook, who helped cut up the corn, with Esq. Bockee, to measure different square rods, husk and measure the corn. The result, according to Mr. Bockee's calculations, was as follows, viz : on the *thick planted*, 114.71 rods, 76.85 bushels, equal to 107.10 bushels per acre.

On the *thin planted*, 45.29 rods, 24.90 bushels, equal to 87.95 bushels per acre. *Average*, 101 $\frac{7}{10}\frac{5}{0}$ bushels per acre. Making a difference in favor of thick planting of 19 $\frac{1}{10}\frac{5}{0}$ bushels per acre.

Statement of Wm. S. Randall's crop of Indian Corn.

The quantity of land under cultivation consisted of about 3¼ acres.

The field had been used for the last five years for pasture and meadow in summer, and for foddering on in the winter. Last spring it was turned over and harrowed about the first of May, and planted about the 15th. The ground was all marked in rows, running north and south, exactly three feet six inches distant, and the corn was planted at an average distance of 18 inches. It was worked with a cultivator twice, and hoed twice. The first twelve rows had a small handful of lime applied to the hill about the time the corn came up. The next forty rows had a small handful of salt applied ; but no benefit was perceived from either application. The corn was harvested by cutting up and shocking near the first of September. It was husked and measured by Michael Conway, John C. Sails and Richard Brushell.

On the acre, 191 baskets—104.31 bu. ; when shelled, 102 $\frac{1}{5}\frac{8}{0}$ bu.

On the 3½ acres, 621½ baskets—339.56 bu. ; when shelled, 332 $\frac{5}{5}\frac{3}{0}$ bushels.

CLINTON COUNTY.

To the Executive Committee of the
New-York State Agricultural Society:

Gentlemen—Herewith are the proceedings of the Clinton County Agricultural Society for 1846.

A meeting of the executive committee was held at the court-house in Plattsburgh, on the 2d September, at which meeting, the last Tuesday in September was appointed for the Annual Fair, and the committees were appointed, and the proceedings published.

The fair was held on Tuesday, 29th Sept., at which there was a good exhibition of cattle, horses, swine and sheep, but in household

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and shop manufactures there was a falling off from last year's exhibition.

A very interesting address was delivered by Thomas B. Watson, Esq. of Keeseville.

The annual meeting of the society was held on the 3d Tuesday (15th) of December, at which time premiums were awarded on crops, &c. At this meeting the same officers were chosen for the ensuing year. It was resolved that a set of the Transactions of the State Agricultural Society be presented to Thos. B. Watson, Esq., for his able and interesting address delivered at the Fair.

The executive committee met and adjourned to meet on the 2d Tuesday in January, to adopt a premium list for 1847, and other business.

THOS. CROOK,
Prest. of Clinton Co. Agricultural Society.

OFFICERS OF THE SOCIETY FOR 1847.—For President, Thomas Crook, of Plattsburgh. For Vice Presidents, Wm. Hedding, of Chazy; S. H. Knappen, of Beekmantown; Wm. Keese, of Ausable; Noadiah Moore, of Champlain. For Corresponding Secretary, Jona. Battery, of Ausable. For Recording Secretary, John W. Bailey, of Plattsburgh. For Treasurer, Peter Keese, of Peru. For Executive Committee, Edwin Benedict, of Plattsburgh; Willets Keese, of Ausable; G. V. Edwards, of Plattsburgh; R. O. Barber, of Beekmantown; Charles L. Hagar, of Plattsburgh.

Premiums awarded on Crops.

Corn—John Keese, 104 bushels per acre. S. H. Knappen, 83 bu. and 4 qts. do.

Z. C. Platt, 41 bu. corn, and 18½ bu. beans per acre.

Winter Wheat—John Keese, 30 bushels. S. H. Knappen, 24 do. C. L. Hagar, 21 do.

Peas—C. L. Hagar, 43½ bushels. S. K. Knappen, 24 do.

Rye—S. H. Knappen, 28 bu. 14 lbs.

Beans—S. H. Knappen, 30½ bushels.

Barley—S. H. Knappen, 32 bu. 3 lbs.

Potatoes—Wm. Keese, 220 bushels. S. H. Knappen, 191½ do.

Carrots—J. W. Bailey, quarter of an acre, 239½.

Beets—J. W. Bailey, half an acre, 569$\frac{1}{2}$$\frac{1}{2}$.

Essay on the Culture of Fruit.

The culture of fruit in this county, it is believed, is not generally well understood by our farmers, although there are honorable exceptions, and many good orchards, and much good fruit. It is, however, believed that the interests of our farmers would be greatly promoted by more attention to this branch of husbandry, and the diffusion of practical information, adapted to our climate and locality.

In the first place, let every farmer (who has not already done so) plant an orchard of the best varieties of fruit, and such as are known

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to be adapted to our climate; and he will consult his own interests by confining his culture to a few standard and approved varieties, yielding a succession of the best fruit. It is now well known by all who understand the subject, that ten trees of the best varieties, properly set out, pruned and cultivated, will yield more profit than one hundred trees set out in the usual way, and left to care for themselves. It is also well known, that an orchard properly planted and cultivated will come into bearing in half the time, that is required for trees carelessly set out and not attended to. With regard to the location of our county for the culture of fruit, I believe it to be unsurpassed by any county in this State. We have a good market within our reach, I mean the city of Montreal, which cannot be supplied so cheaply from any other quarter.

With regard to the profit of fruit culture, I believe (with proper management) the profits will be sure and ample.

In setting out your orchard, choose a dry soil, and dig your holes at least six feet in diameter and two feet deep. Mix the soil taken from the excavation with an equal quantity of compost manure, chip manure, or swamp muck; partly fill your hole with this mixture until the proper depth for your tree. Then set your tree in, and extend all the fibrous roots, and all bruised or broken ones cut off; then fill the hole with the same mixture of soil, &c. It is well to dip the roots in muddy water, and also to pour a pail of water over the roots after the tree is set out, and before it is entirely filled up around it. The tree should be set about an inch deeper than it originally grew. After setting out your orchard in rows, and every row of one variety of fruit, the land should be cultivated every year, with hoed crops. The crops best suited to young trees are potatoes, beans, beets, carrots, ruta bagas and pumpkins. The next best is corn, but it shades the young trees too much. Sowed crops should not on any account be allowed, and grass is still worse. Young trees cultivated as recommended with low hoed crops, will make shoots in one season, longer than they will in three years when in grass land.

Apple Trees.—The distance apart for the rows each way should be two rods, but for several years they may be allowed to stand one rod apart one way, and remove every other one about the time they come into bearing, which if carefully done is attended with no danger. The trees should be washed at least once a year with *ley*—either spring or fall. It will prevent the moss growing on them, and keep the bark smooth and healthy, and also kill all insects and their eggs, which are lodged in any crevice of the bark which affords a shelter. The following are among the best, and succeed well in this climate: *Summer fruit*—the early Harvest, Yellow Bough and Sapson. *Autumn fruit*—the Roseau, Fameuse, St. Lawrence, Autumn Pearmain and Pound Sweeting. *Winter fruit*—the Esopus Spitzenberg, Rhode Island Greening, Seek no Further, Pomme Gris, Roxbury Russet and Beurresee. Careless gathering unfits fruit either for home use or market; therefore, hand picking is

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strictly recommended; suitable ladders, baskets, hooks, &c. should be provided, and the apples placed in barrels, and the head pressed closely upon the apples to prevent shaking. When filled, the barrels should be placed in a cool cellar, and laid down on the side.

The destructive insects to be guarded against, are the caterpillar, borer, canker worm, apple worm and American blight; of these the caterpillar is the most common. By far the best mode to destroy them is to cut off the small branches which hold the eggs, during autumn or winter, and burn them.

Plums may be set out in rows fifteen feet apart; they require a dressing of salt or brine scatterrd over the roots, which will kill the grass, but is very beneficial to the tree, and it is said to kill the curculio. When diseased plums fall from the trees, it is recommended to gather them, and feed to hogs; or when it can be done, allow your hogs to have access to your trees, and they will speedily perform the work for you. This course will prevent the disease extending from the diseased fruit. The following varieties are recommended as among the best. The Green Gage, Imperial Gage, Hulings Suberb, Washington, Yellow Gage, Peach, Bleecker, Magnum Bonum and Egg Plum. The plum can be propagated either by grafting or budding. The latter should be done when the tree is in its most rapid growth, (August) and the former early in the spring, and well ripened wood selected for the grafts.

Pear Trees may stand something nearer together than apples, say twenty to twenty-five feet apart. The only formidable disease that the pear tree is subject to is the fire blight, and the only remedy known, is amputation; let the branch be cut off some distance below the part immediately affected, and the diseased branch burned, as it is believed by some to be caused by an insect working under the bark. The limited culture of the pear in this county does not warrant an opinion as to which varieties will succeed best here.

The following are among the best, cultivated in Massachusetts and the southern and western parts of this State. *Summer pears*—the Bloodgood and Madeline. *Autumn*—the Bartlett, Washington and Seckel. *Winter*—Virgalieu, Winter Nellis, Glout Morceau and Passe Colmar.

The pear is propagated by grafting and budding. Pear stocks are the most desirable, but apple and quince stocks are sometimes substituted with good success.

Cherries thrive well, but as far as my knowledge extends, no choice varieties have as yet been introduced into this county. It is my intention to obtain some of the best varieties next spring, and give them a trial. They are also propagated by grafting and budding, but it is more difficult to make them succeed, than apples, pears or plums.

The Quince has been cultivated successfully for many years, by my neighbor, Isaac C. Platt, Esq., and may be made profitable. It may be propagated by layers and cuttings. They require pruning in tree shape, instead of allowing them to grow up wild as a bush, without form or comeliness.

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The Peach **will only succeed here by being protected; by which means, the finest varieties are grown in Montreal, where the climate is much more severe than here.**

The Gooseberry **may be successfully cultivated in this county, and many good varieties may be found in many gardens. They require pruning, leaving only a single stem for a foot above ground. They are propagated by cuttings taken from bearing shoots.**

The Currant receives very little attention in most gardens, and consequently the fruit is small and inferior in flavor. There are superior varieties, which should be introduced. They are usually propagated from cuttings. Select vigorous shoots of the last year's growth. Two or three buds left on top, trained up to a single stem a foot high, when the branches may be allowed to put out, and form a handsome spreading top.

Raspberries are cultivated successfully by many persons in this county, and may be made profitable. Sprouts of the previous year should be set out in the spring, or sprouts of the same year set out in the fall, about three feet each way and two or three sprouts in a place. They should be kept clean, and the old branches after bearing should be pruned out, and the new sprouts left for bearing the next year. The white and red Antwerp are the best varieties that have been tested here, but a new variety called the Fastolff has lately been introduced into many gardens and nurseries in this State, and is recommended as the best variety; they should be tested here.

Strawberries are well worthy of cultivation; among the finest varieties cultivated, is Hovey's Seedling. This variety is a great bearer, and produces the largest fruit of any known. Beds of this variety frequently become barren in a few years. This is supposed to be caused by over bearing, and the most simple as well as effective remedy is to set out a new bed every year, from runners taken from your bearing bed, and when a bed fails from exhaustion, dig it up, by this means you will avoid the evil. The soil should be rich; set the plants two feet apart each way.

The Grape.—I have a native variety of grape called the Cowan Grape, which is perfectly hardy, and requires no protection; it is an excellent grape and good size. The Isabella and Sweet Water are fine varieties, but must be laid down and covered in winter. The grape is propagated by cuttings.

JOHN W. BAILEY.

Plattsburgh, Nov., 1846.

Account of five acres of winter wheat raised by John Keese, 1846.

Soil sandy loam; clover and timothy sod, four or five years old; mowed the last of 7th month, (July,) 1845; plowed and sowed 20th of 8th month, (August); plastered after coming up, and cut last of July. Yield, 150 bushels; expenses, $65.88; avails of crop, $198.12; profit, $132.24.

John Keese's statement of corn.—Soil gravelly loam; laid in meadow four or five years; plowed in the manure just before planting, which was spread on the sward, about 30 loads; five acres were cul-

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tivated together, one acre measured off; planted large yellow corn, three feet each way, three to four kernels in a hill; surface kept level. Yield, 104 bushels per acre; expenses per acre $27.10; avails, $63.50.

Charles L. Hagar. Peas—soil, a stiff loam, bordering on clay; previous crop winter wheat; plowed in fall, again in spring, sowed last of April. Yield, 43¾ bushels.

John W. Bailey's statement. Sugar Beets.—The land was last year planted with corn, and was well manured for that crop with barn-yard manure; the soil is sandy loam, with sandy sub-soil; it yielded about 50 bushels shelled corn to the acre. May 29, 1846, plowed, dragged and ridged half an acre of land, on which was first spread ten loads manure; 30th, planted in drills made on top of the ridge by hand, the rows about two feet apart. June 26th and 27th, weeded, thinned and transplanted in vacancies. July 14th, 15th and 16th, hoed out beets second time. Aug. 20th, pulled all standing weeds out of the crop. October 24th to 30th, gathered in 353 baskets full, each basket containing one and a half bushels by measure, and weighing, on an average, 100 lbs. after deducting the weight of the basket. 353 baskets at 100 lbs., estimating 62 lbs. to the bushel, is 569 2/6 1/2 bushels to the half acre.

Expenses.

4 lbs beet seed, 4s.,	$2 00	
10 loads manure and drawing, 3s.,	3 75	
Plowing, dragging and ridging, one day with team,	1 50	
Planting in drills, by hand, two days, 5s.,	1 25	
Weeding, thinning and transplanting, 3½ days,	2 19	
Hoeing second time, 5 days work, 5s.,	3 12	
Pulling weeds, half a day, 5s.,	31	
Gathering and drawing in,	5 00	
		19 12
By 569 2/6 1/2 bushels of beets, at 16c.		91 09
		$71 97
Deduct one year's interest on half an acre of land, at $50,		1 75
Profit,		$70 22

COLUMBIA COUNTY.

The executive committee of the Columbia County Agricultural Society, met in the city of Hudson on the 13th day of January, 1846, and awarded premiums on grain and roots, to the amount of thirty-six dollars; the competitors were few and the crops were not large; wheat 22 bushels per acre; corn 41½ bushels per acre; rye 35½ bush-

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els per acre; oats 70½ bushels per acre. Roots, none worthy of premium.

The society held its next meeting upon the 27th day of June, when a list of premiums was made out, and several resolutions passed, tending to advance the prosperity of the society.

The society held its annual meeting on the 5th day of September, when the following officers were elected, viz:

Oliver Wiswall, Esq., President. Leonard W. Tenbroeck, Jacob N. Harder, John Martin, John P. Beekman, Vice-Presidents. James McGiffert, Secretary. Henry C. Miller, Treasurer.

A committee of three gentlemen from each town, was appointed for the purpose of soliciting subscriptions and otherwise aiding in procuring funds for the society. Other committees were appointed for various purposes preparatory to the approaching fair.

September 26th, the society appointed judges for the several classes of animals, and articles to be exhibited on the day of the fair.

October 6. The fair was held this day under very favorable circumstances, the weather was very fine, and the exhibition superior to any similar display heretofore in this county. The plowing matches were not so good as last year, owing to the extreme drouth. The annual address was delivered by J. W. Fairfield, Esq. at 3 P. M., immediately after which, the premiums were awarded to the successful competitors, as can be seen from the vouchers to the Comptroller accompanying the treasurers account.

The ladies of Columbia, as usual, displayed their handicraft in every variety, uniting the useful with the elegant, and by their presence, added much to the general satisfaction of the day.

The above is a brief extract from the minutes.

JAMES McGIFFERT,

Secretary of the Columbia County Agricultural Society.

December 23d, 1846.

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CORTLAND COUNTY.

To the Executive Committee N. Y. S. Agri. Society.

The Cortland County Agricultural Society, had been some years in successful operation, before the legislative act of 1841, by which it received the aid of the State.

Though its number of members has never been large, it has been pretty uniform; and a warm interest in its welfare, as well as a spirit of entire harmony in conducting its operations, has characterized the entire body of its members from its first organization. That it has been productive of benefit to the agriculture of this county, by exciting attention to improved processes in husbandry, improved varieties of stock, products, &c., is now conceded by many who are little disposed to regard such associations with favor. As would be

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expected, in a county mainly devoted to grazing, this benefit is more obvious in regard to live stock; and it is the opinion of many, well qualified to judge, that no contiguous county, and perhaps no one in this portion of the State, exhibits a more general melioration in neat stock, caused by selections and crossing with improved varieties. This was beginning to be the case in regard to sheep also; but a prevailing, and in the opinion of the undersigned, an unnecessary feeling of discouragement in relation to the future prospects of the wool market, has led the holders of many of the largest and best flocks, to break them up, or debase their quality by negligent breeding or injudicious crosses.

The Annual Fairs have uniformly excited much attention both in and out of the society, and have been attended by large numbers of our citizens. Not one has been regarded as a falling off from its predecessor, and in almost every instance, it has, as a whole, manifestly excelled it.

The fair of the current year was held in Cortland village, on the 23d and 24th days of September. The number of animals, products, and manufactures entered, far exceeded in quantity, and taken as a whole, in quality, those of any previous fair. In several departments, the display manifestly excelled that of the State Fair. This was particularly true in relation to fine wooled sheep, swine and young cattle; and in the variety and rarity of the flowers, and in their tasteful arrangement, the show was superior to that of any of the six State Fairs.

The citizens of the village fully redeemed the pledge of the president, that every visitor to the fair should be considered the guest of the village. Every house was open, and accommodations were provided for more than were found ready to accept of them.

The viewing committees were called, and entered upon their duties at eleven, A. M., of the first day, and these were completed by five o'clock, P. M.

Floral hall was filled at an early hour on the second day. At 10 A. M., the society formed into procession in front of the court house, and marched, preceded by the Cortland brass band, to the plowing ground, a quarter of a mile southwest of the village. The plowing match occupied a little more than two hours. At one, P. M., the society sat down to a public dinner. At two o'clock the band struck up, and the society formed into procession, headed by the president, the orator of the day, and the officers of the board, and marched to the Presbyterian meeting house. This large edifice was filled to overflowing, though even the aisles were filled with seats. George Geddes, Esq., of Onondaga county, delivered the annual address. His sound, original, and highly interesting remarks, were listened to with profound attention. At their conclusion, a committee was appointed to request a copy of his address for publication.

The reports of the viewing committees were next read; and at about 5, P. M., this jubilee and festival of the farmers of Cortland county closed.

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The report of the financial affairs of the society, &c., have already been forwarded to the Comptroller.

Some of the most important statements of those drawing premiums on crops, are herewith transmitted.

I have the honor to be, gentlemen,
Very respectfully, your ob't serv't,
HENRY S. RANDALL,
President of the Cortland Co. Ag. Society.

The number of bushels of corn raised per acre, as returned, is very large.

Ralph Burnham,	154	bu. per acre.
Anson Fairchild,	136 16	lbs. "
James A. Rogers,	126 5/8	bu. "
Stephen Patrick,	108 6/8	bu. "
Manly Hobart,	105	bu. "
David Hardy,	88 1/2	bu. "

Corn—R. Burnham's statement.

Land pastured several years before corn was raised. Half the ground plowed in fall, residue in spring, about a week before planting. Forty loads of coarse manure spread before plowing, and twenty-five loads of rotted manure after plowing. A small handful of a mixture of lime, plaster and ashes was put in each hill at planting. After first hoeing, four bushels lime and plaster, mixed together, was put on the corn. Rows three feet apart, and hills twenty inches; four stalks in a hill. Yield was 154 bushels. Expense of cultivation, $62.13; avails, $101.63.

Potatoes—James A. Rogers, Cortlandville.

Soil a gravel and yellow loam. Had been used as a pasture, and seeded down six years. Has been under cultivation over forty years, and poorly tilled. Was turned over with a three horse team; laid about fifteen days, and harrowed lengthways of the furrows four times. Marked both ways with a marker, striking four rows at a time, three feet and two inches apart. Manured with about half a shovel full of manure to each hill. Planted 23d May, about one-third long pink eyes, the rest merinos, &c. Hoed first time 25th June; the next time, 11th to 13th July. Dug the latter part of October, so that the diseased ones might decay. Raised 197½ bushels, which sold for 2*s.* per bushel.

Expense of cultivation,	$28 71
Int. on land, at 7 per cent.,	3 50
	$32 21

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By 197½ bushels potatoes, at 2*s*.....	$49 38
By manure, valued for next crop,.....	2 00
	$51 38
Deduct expenses, ...	32 21
	$19 17

From another half acre in same lot as above, obtained 110 bushels. And from another, 87½ bushels.

These two last pieces were struck with the blight, and the tops all died.

Indian Corn—Manly Hobart's statement.

The following is the manner of treatment and its results of four acres of corn, which I planted the past summer:

The field had been stocked down to clover for six years. Pastured three, and meadow the three last years. Previous to breaking up for corn, which was the forepart of April, drew on twenty loads of long manure per acre, and turned it under. The last week in April, drew on eighteen loads per acre, and spread it, then harrowed both ways, then marked and planted the 5th day of May. Hoed twice, cut it up the first week in September, husked in October 654 baskets, weighing 38½ lbs. per basket of shelled corn—420 bushels.

At 4*s*. per bushel,.....	$210 00
Twenty loads stalks, 8*s*.....	20 00
	$230 00
Expense for four acres, ...	80 50
	$149 50

Indian Corn—Stephen Patrick's statement.

The ground was previously meadow land, producing clover and timothy abundantly for seven years in succession, by annually applying two bushels of plaster to the acre. The soil a gravelly loam; a light mixture of gravel, a retentive soil; surface flat. Was plowed in the fall of 1845, to the depth of 6½ inches; was well harrowed in the spring of 1846, and then furrowed with a small corn plow in rows 3½ feet apart, four inches deep. The ground was manured with twenty loads of well fermented horse manure, half a cord to a load, applied in the hill, 3½ by 2½ feet apart. The corn was planted 21st of May, from four to six kernels in a hill. Was top-dressed the 4th of June with five bushels of unleached ashes, and three bushels of plaster mixed together. Corn hoed twice; first time, second week in June, and trimmed to four stalks in a hill; the second time, last week in June. Corn was cut up and shocked

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the second week in September. Harvested first week in October. Yield, by weight, 108 $\frac{6}{8}$ bushels. Expenses, $29.70.

Truxton.

DELAWARE COUNTY.

Delhi, March 31st 1847.

To B. P. Johnson, Esq. *Sec'y. State Ag. Soc.*

The Annual Fair of this society was held October 7th, 1846.

Notwithstanding the *political* excitement which has much deranged the farming community in our county during the last two years, the exhibition at our last Annual Fair, evinced an increasing desire to improve the stock of the county, and an evident conviction that *good stock*, is as easily kept as *poor*, and with much more profit.

Some fine stock was exhibited, especially *sheep*, and animals designed for the *dairy*, wool and butter being the staple productions of the county.

But one premium was awarded on crops.

The ladies have manifested much *zeal* as well as *good taste* and *skill* in the variety of useful and ornamental specimens of their handiwork exhibited at the fair. Amount monies received by subscription, $100; from the State, $100; paid in premiums, $200.

Officers—David G. Smith, President, West Meredith. Morris L. Farrington, Delhi; Levi Hanford, Jun., Walton; Admah Lewis, Meredith; David Morell, Davenport; Abr'm. Thomas, Jun., South Kortright; Wm. McLaughry, Delhi; Vice Presidents. Crawford B. Sheldon, Treasurer, Delhi. Alfred Redfield, Secretary, Delhi.

Our society during the last year lost its most efficient member in the death of Doctor E. R. Fitch, its President for several years. The other officers of the society were all new, and the President had taken upon himself the whole charge and management of the affairs of the society, others troubled themselves but little about it, and did not know that a report was necessary for the State Society.

There was but one applicant for premium on crops,and that was on spring wheat. A statement of the manner of preparing the ground, &c, was handed in by the applicant, but as I was not aware that it was necessary to be reported to the State Society, it has got mislaid. But little attention has been paid to raising crops in this county compared with many parts of the State. I am not aware that any statement was required from applicants for any of the premiums awarded except the one mentioned above. The southern portion of our county is principelly engaged in lumbering, and in the other portions the dairy business occupies the largest portion of the farmers with the rearing of cattle, and also sheep and wool.

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Most of the products of this county are bought at the farmers houses, particularly cattle, sheep and wool. The butter is also purchased at the houses or taken to Catskill, and a little to New-York.

ANTHONY M. PRIME, *Treasurer.*

DUTCHESS COUNTY.

The Annual Fair and show of the Agricultural Society of Dutchess county, was held at Washington Hollow, and was among the most interesting exhibitions ever held by the society. The society was never in a more flourishing condition, and entire harmony and good feeling exists among its members, and there is a deep interest felt among all, to extend and promote its greater usefulness throughout the county.

Through the instrumentality of this society, a horticultural show, held twice a year at Poughkeepsie, has been established, and sustained with great interest. The amount of funds recieved the past year, is double that which the society received at its commencement. Over one hundred copies of the Cultivator has been subscribed for to be distributed among members as an additional inducement to their becoming subscribers to the society.

There has been an increase in the number of entries over preceding years; the show of horses and colts was good; the number of sheep, especially of long wooled, exceeded any previous show.

The number of oxen, cows and calves entered for exhibition, was eighty-five. The number of horses and colts, thirty-six. The number of sheep and lambs, one hundred and thirty-four. The number of swine, thirty-five.

The display of fruits and flowers was more beautifully arranged, and the room fitted up with more taste than ever before.

The show of working cattle was far superior, both as to number and quality, and in better training and condition than at any previous show.

The committee on experiments reported that three specimens of Marl were noticed, two of white and one of dark color, the proportions in which clay and lime are found combined are many and various, which render it difficult to give an opinion of the value of either, for all kinds will ameliorate the soil if rightly applied, which can be known by experiment or analysis. The mode of applying and its effects, has been handed to us by Mr. John Van Wyck, one of our agriculturists, for which we award him Downing's work on fruits and fruit trees of America.

They also award to Mr. William Sisson, a Vol. of Transactions for the 2d best sample of marl.

They also award to Mrs. Sarah Dakin, $3, for the best communication on the management of poultry.

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Management of Farms.

The committee on farms report that they have visited the farm of Henry Vail, situated in Stanford. It contains 213 acres, 33 of which is wood land, and the remainder under improvement and cultivated in field crops.

We found the farm in good condition and well fenced with stone wall in twenty fields, varying in size from two to twenty acres. The walls are some of them five and a half feet in height, and mostly of slate stone gathered from the adjoining fields as they are thrown from the soil, or torn out of the ledges by the plow.

The division of the farm in crops this year is as follows:—twenty acres in rye, forty acres in oats, thirty acres in corn, three acres in potatoes, ten acres in buckwheat, forty acres in meadow, thirty-seven acres in pasture. He has forty acres sown to rye, and ten acres to wheat, on part of which oats was grown, the remainder reclaimed swamp. There has been pastured during the season seventeen head of cattle, including three yoke of working oxen, and six cows, the remainder in young stock, 4 farm horses, and two colts, sixty sheep, and ten hogs.

We cannot do otherwise than hold up for emulation the untiring industry and energy displayed by Mr. Vail in improving and cultivating his farm, and therefore award to him the first premium of the society.

STEPHEN THORNE,
BARCLAY HAVILAND,
AARON VAIL.

Management of Poultry.—By Mrs. Sarah Dakin.

Hens.—1st. Provide a warm dry shelter for winter.

2d. Feed with oats, soaked for twelve hours in warm water before feeding.

3d. Burn clam shells and pound them fine, let them have as many as they can eat, and you may have eggs from January to December.

From thirty hens I have gathered this year three thousand five hundred and twenty-two eggs by the tenth of September, and raised two hundred chickens.

I manage my chickens by feeding oats and rye ground, two bushels of oats to one of rye. Keep them in a warm shelter at night.

N. B. To prevent the pip or gaps, change the male every year, and your chickens will be healthy.

Management of Turkeys.—1st. Feed the same as hens, and let them hatch their young ones any time after the twentieth of May.

2d. Feed the young ones oats and rye ground, wet with milk curd, and occasionally sprinkle a little powdered clam shell lime with the feed; if cold and wet weather, sprinkle a little black pepper with their food.

3d. Make warm and dry shelters for them to brood in nights, and keep them from the wet and dew until the sun shines warm.

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4th. Feed but little the first twenty-fours hours after they are hatched; by this management I can raise nine out of ten.

Be sure and change the tom turkey every year.

Raising Goslings.—1st. Have them hatch as early as the first of May if possible. Make dry, warm places for their nests.

2nd. Feed the young goslings with corn meal, put one tea spoonfull of salt in a pint of meal, wet the feed with milk.

3d. Let them have access to water in pleasant weather.

4th. Keep them at night in a warm dry shelter.

By this management I can raise forty-nine out of fifty.

Ducks.—Feed ducks the same as goslings. In this way I have raised fifty-two young ones from two old ducks in one year.

North East, Oct. 5th, 1846.

The address was delivered by Mr. Robert Wilkinson, on Thursday afternoon, in his usual pleasing style. He drew a true and lively picture of the old fashioned instruments in use ten years ago, in contrast with the modern improved ones of the present day. It is hoped he will furnish the society with a copy for publication.

Immediately after the address, a proposition was submitted and carried, that any one, by the payment of one dollar, shall be a member of the society for the coming year, and be entitled to receive a copy of the Albany Cultivator or the New-York Agriculturist, for one year from the first of January next. The society, by subscribing for 100 copies of each, obtain them for half the usual price. If it should be the means of doubling the number of members, the society will not be the loser, but on the contrary, will enlist so many more interested in its welfare.

The officers of the preceding year were unanimously re-elected, and a resolution passed, that the next fair be held at the village of Poughkeepsie.

OFFICERS.—Stephen Haight, President. John F. Sheafe, Cornelius Dubois, Elnathan Haxtun, Thomas Taber, Obadiah Titus, Dudley B. Fuller, Vice-Presidents. Henry Mesier, Secretary, Wappingers creek. John Van Wyck, Assistant. Barclay Haviland, Josiah W. Wheeler, Corresponding Secretaries. George Wilkinson, Treasurer.

Statement of crop of Oats and of Wheat.

The ground upon which the oats grew, is a ridge of land composed of clay, loam and gravel, rather a light compact soil, part of it rather wet; the ground was plowed but once, in the ordinary manner, in the early part of April. Sowed about the middle of April, the wind being very high at the time of sowing. The oats came up very uneven; the yield was much lessened on this account. Clover and timothy seed was sown, and when the grass seed had vegetated, plaster was sown at the rate of one ton to fifteen acres. Owing to the uneven manner in which the grain came up, a large pro-

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portion of smut and blasted grain was the consequence. The yield was $612\frac{3}{33}$ bushels from eight acres, for which a premium of eight dollars was awarded to Geo. W. Wilkinson, of La Grange, our treasurer.

The ground upon which the wheat crop grew is a clay loam, the wheat was sown after oats, with once plowing, and thirty cartloads of manure, spread evenly and harrowed in with the wheat; sowed the 10th of 9th month. The yield was $27\frac{57}{60}$ bushels to the acre. A premium of five dollars was given to Barclay Haviland, of Washington, corresponding secretary.

Statement of expenditures.

In 1842, we paid out for premiums,	.....	$289 00
1843, there was considerable plate distributed. The amount of money was,	.....	119 00
1844, paid in cash,	.....	217 00
1845, do do	.....	337 00
1846, do do	.....	359 00

In this year, 1846, there was also distributed among the members, agricultural works to the amount of $95.37½. We are now subscribing for 162 agricultural papers for the members. The value and advantages of circulating agricultural papers, cannot be too much urged upon the county societies, as it creates and keeps alive the interest of its members in their shows, besides the solid practical information they impart. And in this respect, I think we set a good example to a large majority of the societies.

Respectfully yours,

HENRY MESIER, *Secretary.*

Dutchess Agricultural Institute.

This institution was founded in the spring of 1846, by John Wilkinson, and has thus far succeeded well. The first term there were five pupils, and the second eight, and an increase is expected the next term. The course of studies pursued in this institution, is such as to furnish to the students every facility for acquiring a thorough knowledge of scientific as well as practical agriculture.

The institution is under the patronage of the American Agricultural Association, the Farmers Club of the American Institute, and the Dutchess County Agricultural Society.

ERIE COUNTY.

The executive committee of the Agricultural Society of Erie, met on the 21st January, 1846, in pursuance of advertisements in the newspapers. They appointed the 23d and 24th days of September, as the days for the annual exhibition, and offered premiums amount-

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ing in the aggregate, to four hundred and seventy dollars, exclusively of diplomas and the books received from the State society.

Several alterations were made in the list of premiums. A larger proportion of premiums were offered for sheep. A reduction was made by forming one class of the grade and native cattle, the committee being of opinion, that few specimens of unmixed native cattle are offered for competition on such occasions. It was concluded to offer no premium for any grade or native bull. This was objected to by one or two members of the committee, on the ground, that such animals sometimes possess great excellence, and that it is not yet a settled question if some species of grade stock, may not be the best for this country.

Competition was declared to be open to all animals, articles, and productions previously exhibited. This rule was intended to apply to one year only, and was adopted in consequence of an apprehended scarcity of competition. It was hoped also, that it would have the effect of bringing the best animals in the county to the notice of our farmers and visitors.

A committee of five persons, resident in different parts of the county, was appointed for the purpose of furnishing a list of judges to award the premiums. This list was adopted by the executive committee, on the 20th August following.

The officers of the society have from time to time furnished information of their proceedings to the newspaper press of Buffalo, and thus to the public; acting upon the principle, that publicity in all their proceedings was beneficial to the society.

I now give you an account of our exhibition, and the subsequent elections. This appeared in the daily papers, and, should you publish our proceedings you can make such extracts as you deem advisable.

The following officers were elected for the ensuing year:

Orlando Allen, Buffalo, President. A. McArthur, Buffalo, Aug. Raynor, Clarence, W. S. Rees, Evans, G. H. Hamlin, Aurora, A. Chilcot, Hamburgh, James Woods, Concord, Vice Presidents. R. Hadfield, Buffalo, Sec. Jason Sexton, Buffalo, Treasurer.

This exhibition has been undoubtedly far superior to that of last year, and at least equal to that of any other. The separation of the cattle and horses from the other parts of the show, made the number of spectators appear less than it was, but very many farmers were present and evinced great interest. It is to their attendance and interest that the efforts of the society must be directed. They are the only proper and lasting foundation for it. There is plenty of good material for a society little inferior to that of any other county. It can and must be drawn out into the proper shape. The farmers were well satisfied with this year's proceedings. We must go on. We must have the State Show here in 1848, and make it more than a National show, by throwing competition open to the Western States and Canada.

There was a good show of horses.

Of Durham Cattle the number was not so great as it has been. Of Devons it was greater than ever before. Of Grade and native

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cattle the entries were numerous, and the competition was close. Working cattle were not numerous. Mr. Lamb, showed a splendid fat ox. The Milch Cows were really first rate.

The Sheep exhibited were far more numerous than ever before. In long wooled sheep, we generally make a better display than the State Show has for two years past. If the State of New-York means to beat us in 1848, when they visit us, they must do their best. Some of these, as well as other classes were refused carriage to the State show by the Tonawanda railroad—though the owner complied fully with their directions. This is highly unjust to this part of the State, and very different from the conduct of our railroad and its courteous manager—Mr. Wallace.

A large display was made of fine wooled sheep, and the qualities were such that it was difficult to decide.

Good Swine were shown, and there was a better display of butter and cheese than at Auburn. But our dairymen can and will do better.

Of farm and garden products there was a good exhibition. Competition in these articles will annually increase with the growth of the city.

Household products were not so numerous as we wish.

Mr. Webb of Prospect Hill, showed a beautiful floral design, and a variety of flowers.

Judge Love's farm took the first premium and was well worthy of it. He was awarded an extra diploma.

Competitors in the Plowing Match, were as in former years, few though select. We recommend that this affair which keeps the farmer in town an additional night and day should be discontinued, and premiums applied to the encouragement of raising steers for the eastern market.

ROBT. MACPHERSON, *President.*

ROBT. HADFIELD, *Secretary.*

FULTON AND HAMILTON COUNTY.

The last Fair held in Fulton county, was in 1843. The Society was not re-organized until about the first of September, 1846, at a period so late, that great fears were entertained by many of its friends, as to its success. The result however, proved very satisfactory, and gives evidence of the zeal and faithfulness of the farmers of Fulton and Hamilton, and that they are anxious to equal at least their brethren of the other counties of the State. The *Cattle Show and Fair* was held on the 20th of October, and the attendance of farmers, and the exhibition of stock and articles in the various departments, were in the highest degree satisfactory. A very able and appropriate address was delivered by *John Wells, Esq.*, of Johnstown.

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We give extracts from the reports of committees, and other proceedings of the society.

The committee on *Neat Cattle* would observe, that they noticed upon the ground quite a variety of excellent cattle of different ages and grades, but which were not entered for premiums, and consequently not entitled to the same. Their attention however, was more particularly called to the short horned Durhams and Herefords of Mr. Edward Wells of Johnstown, as fair specimens of their varieties, and they cannot but believe that Mr. Wells is entitled to the thanks of the farming community, for the pains he has taken in introducing such valuable animals into the county of Fulton; and they hope that as a breeder, he may receive that patronage and encouragement to which his public spirit and liberality (in the opinion of your committee) so justly entitles him.

John Frey, Thomas Simmons, Abm. Mosher, committee.

Merino Sheep.

The attention of the committee was called to several pens of Bucks and Ewes on the ground, but not entered for premiums. The three bucks and twelve ewes exhibited by Mr. Briggs, President of the Society, were of superior quality. Mr. B. is doing much to improve the breeds of sheep. Several bucks belonging to Mr. Edward Wells, are of superior quality, both as regards body and wool. Mr. W. is entitled to much credit for his exertion in promoting and improving good kinds of stock. Judge Weston showed two very fine bucks from 'Pettibone's celebrated flock of Vermont.' A large number of other bucks and ewes were exhibited, which did much credit to the show, but the owners' names the committee did not learn.

Thaddeus St. John, E. W. Prindle, James Yauney, committee.

Grain and Roots.

To J. Hillabrant, best acre of corn, 97 bushels,.....	$4 00
M. D. Wemple, 2d best acre of corn, 87 bushels, ...	2 00
J. Hillabrant, best acre of potatoes,....., ...	2 00
M. H. Heagle, best 1-8th acre carrots,.....	2 00

Butter and Cheese.

To Henry W. Veghte for the best firkin of butter of 70 pounds, made in May or June last,.....	$4 00
To Mrs. Archd. Anderson, for best 15 pounds of butter, made within thirty days past,.....	1 00
Luther Potter, best sample of cheese,.....	2 00

Mr. Henry W. Veghte furnished the following:

The firkin of butter was made in two weeks during the month of June, from six cows; used about seven pints of Liverpool sack salt, put in a little crushed loaf sugar between each churning.

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Mr. Luther Potter furnished the following:

The cheese was made in one week during the month of August, from the milk of six cows. I use about a gill of salt to eight pounds of cheese and press two days; then place the cheese in a dry, cool cellar, well ventilated, grease well with good sweet butter every day, and turn them at the same time. I put in as small a quantity of sweet *rennet* as will turn the milk in fifteen minutes.

Mrs. A. Anderson furnishes the following statement:

The fifteen pounds of butter presented at the fair is a part of 19½ pounds made from the milk of one cow (less 55 quarts of the milk used) from the 24th of September to the 17th of October, inclusive. The milk set in shallow eight quart tin pans; the cream removed when the milk begins to thicken; churned every fourth day; worked with a hand ladle, and wash in cold water, adding some salt: work over the next day thereafter, work no more than to entirely separate the milk from the butter; used no other ingredients but Liverpool sack salt; cannot state precisely the quantity of salt used, think about sixteen ounces were used to the whole quantity.

There were 73 entries for premiums; the amount of premiums offered was $120. Premiums to the amount of $119.75 were awarded, and have been paid by the Treasurer, leaving a surplus of $48.50 in his hands as a capital for the ensuing year.

ELISHA BRIGGS, *President.*

A. Anderson, *Secretary.*

Fulton and Hamilton County Agricultural Society in account with Edward Wells, Treasurer.

Receipts.

October, 1846—To amount received, donations, membership, entries, &c.,	$117 00
Received from State Treasury,	60 00
	$177 00

Disbursements.

October. By amount of premiums paid,	$119 75	
For printing, stationery, &c.,	8 75	
Balance in my hands,	48 50	
		$177 00
December 31, To balance in my hands,		48 50

Edward Wells, *Treasurer.*

Officers for 1847.

John Logan, Broadalbin, President. J. L. Hutchinson, Ephratah, Vice President. E. W. Prindle, Johnstown, Vice President. Edward Wells, Johnstown, Treasurer. Archibald Anderson, Johnstown, Secretary.

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GENESEE.

B. P. JOHNSON, Esq., *Secretary of the New-York State Agricultural Society.*

The Agricultural Society of the county of Genesee, held its Annual Cattle Show and Fair in the village of Batavia, on Thursday and Friday, the eighth and ninth days of October last past.

Never since the establishment of our society have we been favored with so large and general an attendance as upon that occasion; our farming community turned out in mass, and by their presence and zeal in the good cause, manifested that they were aroused to their own interest, and would lend a helping hand to further the advancement of agriculture in our county. There were some five hundred animals, farming untensils and domestic manufactures entered for competition; and some five thousand persons congregated to see the show, and I venture to say, that no other county in the State excelled *old Genesee* this year in the splendor, beauty, style, quality or quantity of her productions. Her domestic animals were of the rarest and best breeds and qualities that the country affords, with now and then a splendid contribution from over the water. The mechanic arts exhibiting all the useful improvements and finish of modern times with farming utensils, from the ox yoke to the threshing machine, were there; and the ladies too, contributed of their own handy work, to delight and enlighten all such as have a taste for, and admire the beautiful and useful productions of the needle. The long lines of cheeses, the golden butter, the light and elegant specimens of bread, with maple sugar as white as Woolsey's best, made the epicure laugh and involuntarily lick his chaps in anticipation of the pleasure to be derived from the good things of this life. Fruit in its varieties and perfection; apples, pears and peaches, with many other productions of the garden and orchard, were brought out in abundance; and horticulturists seemed to vie with each other to excel in the elegancies of their collections.

Our soil is so prolific, that some of the specimens of its growth attracted much attention by reason of their enormous size. Several squashes were exhibited from the garden of Jerome A. Clark, Esq., of this village; one of which weighed 150½ pounds, and one 149 pounds. I speak of these because they were prodigies in their way, and show what cultivation can do.

Our breeders of cattle and horses are giving close attention to the improvement of their stocks, and I venture to say, Genesee county can now show as many fine young horses and fine cattle, as any other county of the same number of square miles in Western New-York. Her cattle are *Devons*, with here and there a cross of the Durhams, intermingled with the native breeds; but the preference is generally given to *cherry reds*, insomuch that the *ringed, streaked, and speckled lean kine* will soon be no more known among us. All the theory in the world, with the aid of the agricultural papers of the State, cannot convince our people that Durham cattle

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will keep as easy, can be made as useful for all work, or stand our winters or sell as well, or are as beautiful in symmetry, as the pure blood, elegantly constructed, sprightly Devons; unsullied with the *grisley gray* of the heavy, clumsy, coarse meated, big jointed, raw boned Durham. The means of our society are, and have been too limited to do all the good we could wish. There has been distributed for the year 1846, about two hundred dollars in cash premiums, and some twenty volumes of New-York State Transactions; and I think I may safely say, that the future promises well for the agriculturist of old Genesee; and the next rally of the yeomanry of our county will far exceed any thing which has passed.

On the first day of our show and fair, Doctor Lee addressed the large concourse of people assembled upon the show ground; and on the second day Joel B. Nott, Esq., Corresponding Secretary of the State Society, gave an address at the court house, both of which were sound and practical, and creditable to the hearts of their authors.

Allow me sir, to add, that there is no subject more deserving of the fostering care of the Legislature than agriculture; and I devoutly hope I may live to see the day, when the finances of our State will admit of the distribution of a much larger amount of money than is now devoted to such purpose; for confident am I that great and permanent good results therefrom.

Yours, I am sir, very respectfully,
EDGAR C. DIBBLE, *President*
of Genesee co. Agri. Society.

Batavia, March 31, 1847.

GREENE COUNTY.

To the Executive Committee of the N. Y. State Agri. Society.

The undersigned, has the honor, as President of the Greene County Agricultural Society, of submitting their annual report. The Annual Fair of this society was held at Greenville, on the 1st and 2d days of October last. The amount of funds belonging to the Society, was $344.02. The amount paid for premiums is $234.74. Leaving a balance in the Treasurer's hands of $109.28. The attendance was very full, and an increased interest was manifested on the subject. The show of working cattle, sixty yoke, was larger than at any previous fair, and in the opinion of good judges, as fine a specimen, as any county could boast. Young cattle and cows, were about as usual. Of the favorite animal of man, the horse, there were about fifty matched and single on the ground, and for beauty, and the horse for all work, they were superior to any previous exhibition, and some of the native stallions could not be surpassed. The exhibition of native Merino and Bakewell sheep, though not large, was of a good quality. The exhibition of swine was excellent. There was the usual abundance of fine fruit and gar-

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den vegetables, and some very excellent samples of wheat, rye and corn, were offered. There was a full assortment of manufactured articles, such as woolen cloths, cassimeres, flannels, plows and farming utensils, &c., with various other products of the skill of our worthy and indispensable mechanics, together with a beautiful display of female handiwork. This Annual Fair gave increased evidence of the beneficial effects of the society, on that useful class of community, which the world cannot do without. No accident occurred, or exhibition of improper conduct appeared to mar the pleasure of this farmers' festival, and the friends of the society look forward with greater interest to the result of the coming year. The annual address was delivered by Judge Levi H. Alden, a practical farmer and mechanic, of Windham. N. B. I omitted in my last year's report of the fair at Cairo, the exhibition of sole leather, for which this mountain county is so peculiarly celebrated. It consisted of a train of wagons drawn by from two to six horses each, carrying from 200 to 700 sides, valued at $20,000. The wagons were tastefully decorated with hemlock boughs. The foremost wagon, belonging to Z. Pratt & Co., bore a banner inscribed with the motto "by this we thrive." This unusual and unprecedented arrival, was greeted by the hearty and long continued cheers of the wondering and astonished multitude.

They were escorted through the village by the citizens in carriages and wagons, with the Durham and Greenville bands of music, and followed by the great "celebration wagon from Greenville, drawn by thirty yoke of oxen," loaded with all manner of vegetables, fruits and flowers, arranged in the most tasteful manner. The whole procession reaching more than a mile in length.

Z. PRATT, *President*,
Greene co. Agri. Society.

Prattsville, January, 7, 1847.

Greene County Agricultural Society.

The annual meeting of the Greene County Agricultural Society, was held at Cairo on Tuesday last. The following gentlemen were unanimously elected officers for the ensuing year:

Zadock Pratt, President. Uriah Stevens, 1st Vice President. George Beach, 2d Vice President. J. T. Cook, 3d Vice President. C. L. Kierstead, 4th Vice President. Stewart Austin, 5th Vice President. H. L. Day, Recording Secretary. R. VanDyke, Cor. Secretary. Stephen Hotchkiss, Treasurer.

HERKIMER COUNTY.

The Annual *Fair and Cattle Show* of the Herkimer County Agricultural Society, was held at the village of Little Falls, on the 1st and 2d days of October, 1846. There was a good attendance of the farmers, their wives and daughters, and the usual interest mani-

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fested. Many fine cattle and good horses were exhibited; and the samples of cheese offered, gave evidence that improvements in the manufacture of this article are made from year to year, both in quantity and quality.

The exhibition of mechanical implements, was creditable to the mechanics of the county. The worsted and woolen manufacturing company, presented specimens of carpeting and rugs that reflected great credit upon the taste and enterprise of the manufacturers.

Great praise is due to the *Ladies*, for the splendid exhibitions of linen diaper, linen handkerchiefs, coverlets, quilts, flannels, curtains, window shades, rugs, ottomans, fancy boxes, needle work, &c.

The first premium on corn, was awarded to Thomas Reed, for 118 28-56 bushels per acre. The second to Adam Feeter, for 117 bushels per acre. First premium on cheese to R. D. Brown, Fairfield. Second premium on cheese to Samuel Green.

The annual address was delivered by the Rev. D. Chassell, President of the Society.

Officers, 1847.—Rev. D. Chassell, President, Fairfield. A. Beckwith, Vice President, Cedarville. A. Loomis, Secretary, Little Falls. Thomas Burch, Treasurer, Little Falls.

Cheese—R. D. Brown's statement.

The manner and time in which the sample of cheese No. 1, was manufactured, is as follows:

Made in the month of June last; milk set at from 86 to 90 deg. heat; rennet sufficient to harden the milk for cutting, in from 20 to 30 minutes; rennet prepared as follows: To 4 rennets, 1 lemon, 6 teacups salt, ¼ oz. cloves, add 3 gallons water, and stand with occasional stiring, three or four days before using. After having been thoroughly broken and properly wheyed off, scald the curd with two applications of hot whey, which shall raise the heat from 104 to 108 degrees. Stand from fifteen to twenty minutes, remove the hot whey and apply two or three pails of cool whey, stir about five minutes; drain thoroughly and work the curd fine, then apply eight ounces dry common salt to from 16 to 18 pounds curd, after being thoroughly pressed; turn in from two to three hours, and press twenty-four hours.

Process of Cheese Making—Samuel Greene's statement.

Cheese made from one day's milk—The animal heat of the nights milk removed by sitting in vessels filled with cold water; cream removed from the tub in the morning and thorougly mixed with a portion of the warm milk before adding the rennet. The night's milk warmed sufficiently, so that when mixed with the morning's milk to raise the temperature to 84 or 85 degrees, when the rennet is added in sufficient quantity to produce a curd in from 50 to 60 minutes, when it is cut with a cheese or curd knife, into checks an inch or an

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inch and a half square; after allowing time for the curd to settle, commence breaking the curd with the hands and raising the temperature during the time of working, with warm whey to 98 or 100 degrees, and *in no case to exceed the latter*, after working the curd, so as to thoroughly separate it from the whey, it is placed in draining cloth in the sink and kept loose by stiring until the whey has principally drained off; then add one teacup full of salt to 11 pounds curd, or one pound salt to 30 pounds cheese; salt should be added before the curd cools; after a thorough mixing of the salt and curd, put to press; turn in two hours, again at night; press twenty-four hours, &c.

JEFFERSON COUNTY.

The Jefferson County Agricultural Society report that said society have received during the past year,

From members of the society, ...		$319 00
Balance on hand at last report, ...		165 75
From Treasurer of this State, ...		183 00
Admission into the hall, &c., ...		93 14
Making, ...		$760 89
And have paid for		
Premiums last year, ...	$451 00	
A. Ely bal. due on Agricultural Hall,	161 53	
Contingent expenses, ...	61 85	
		$674 38
Leaving in the hands of the Treasurer, ...		$86 51

The Cattle Show and Fair was holden in the village of Watertown on the 22d and 23d days of September last. There was a very large attendance and the affair went off with spirit. An address was delivered on the 23d, by Joel B. Nott, Esq., Secretary of State Society.

Edward S. Salisbury of Ellisburgh has been elected President for the ensuing year. E. S. Mapes, Secretary. O. V. Brainard, Treasurer.

Respectfully submitted,
GEORGE WHITE,
President.

Winter Wheat—J. B. Ball's statement.

The previous crop was Spring wheat, after the manner of the "*Jefferson County Industrial Association*," which, though not very exhausting, so far as the amount of produce was concerned, yet, certainly, left a comfortable sward of *thistle*, *sorrel*, *mullen*, &c., to be plowed in. I plowed and harrowed three times, and sowed

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broad cast, the 3d day of September, 1845. I sowed two bushels of clean "Canada Flint" seed to the acre, without any other preparation than cleaning through a fanning mill. I harvested in the usual manner with cradles and threshed with a machine called a "cleaner." The acre was measured with a rod pole, and the grain measured in a sealed half bushel, and the actual produce thirty-five bushels.

Oats—Curtis Goulding's statement.

The soil on which the oats were grown was clay. The previous crop, peas and oats mixed. Manured this year with fifteen loads of manure per acre. The 20th of April plowed; the 24th sowed, with two and a half bushels per acre, and harrowed in. The 11th of August cradled and bound, and left standing in the shock until thoroughly dry; then drawn in the barn, threshed and measured; producing 67½ bushels per acre.

Peas—Aaron Shew's statement.

Raised one hundred and twenty-five bushels of peas of the Marrowfat kind, on 3 19-100 acres of land, the season past, in the following manner: Plowed the land in the Autumn previous, it being a sward of some four or five years old; harrowed once in the spring previous to sowing; used eleven bushels of seed; harrowed twice after sowing, and rolled with a heavy roller. When the peas were about three inches high, sowed about one-half the piece with plaster, which improved them one-fifth. The peas after being cut were threshed on the sod, then drawn into the barn and cleaned, and all measured; it being an average of 39 18-100 bushels to the acre.

Spring Wheat.

The wheat grew on land from which corn was taken last year, with a moderate dressing of manure, plowed under in the fall. I sowed the fore part of May, three bushels to the acre, *and four bushels salt;* both harrowed in together. I left a small piece on which no salt was sown. That salted came up more healthy and continued so. At harvest the wheat was heavier and the heads longer than that without salt. The growth was great straw, sufficient to have yielded forty bushels to the acre. The weevil reduced it to 23 bushels from one acre. The time to sow to get clear of the weevil and rust is what I have not been able by observation to satisfy myself of.

Spring Wheat—E. D. Allen's statement.

Previous crop, corn and potatoes on green sward, with ten loads chip and barn manure. Present season, eight loads barn manure on poorest part. Seed, 2½ bushels Black Sea variety. Sown 28th April; harvested, cradled and bound, 25th July; threshed with flail

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and twice cleaned with fanning mill; measured 25¼ bushels. Cost of cultivation, say $6.25; seed $2.50—total expense, $8.75.

Barley—E. S. Salisbury's statement.

The previous crop was winter wheat, sown on a summer fallow, without any manure. The soil on which said crop was raised is a mixture of clay and sand loam. The field contains five acres 25-160ths of land, which was plowed late in November, 1845, at the depth of about eight inches. About the 5th of May last it was well harrowed before plowing. It was plowed on the 6th and 7th, and harrowed down before sowing, and on the 8th of May it was sowed with 3½ bushels of two-rowed barley to the acre, and harrowed both ways and finished on the 9th. No manure was applied to the barley. The product was 290 bushels of good clean barley by measure, weighing nearly 48 pounds to the bushel, making 55 20-32 bushels per acre.

Barley—Jerome Ives' statement.

Previous crop, spring wheat, without manure; present season, two loads barn manure and two of leached ashes on *clay spots*; seed, 2½ bushels; sown 1st of May; harvested, cradled and bound, 20th July. Threshed with horses, and twice cleaned with fanning mill; produce by measurement, 41¼ bushels; overweight two pounds per bushel; making by weight, 42 bushels and 46 pounds.

Broom Corn—Nelson Clark's statement.

This may certify that I examined 140 rods of broom corn, which belonged to Nelson Clark, of Le Ray. The rows were three feet apart, and hills, 16 inches. I likewise helped measure 43 bushels of clean seed grown from the same. The crop would make 500 brooms.

RANA COOPER.

Broom Corn.—Wm. J. and A. P. Lewis's statement.

Previous crop, winter wheat, on fallow ground, no manure since plowed. Number of rods planted, 74; planted May 23d; about four quarts of seed put in, did not half come up; the whole crop should have grown on one-fourth of an acre. The amount of the crop made up a trifle over 200 brooms. The seed used was half the long brush, and half the short or common brush.

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Potatoes—Samuel Felt's statement.

Dug and measured from one-half an acre in his potato field, measured by a surveyor's chain, one hundred and ninety-five bushels of potatoes. The land was green sward; turned over the 1st of May. They were manured in the hill at the rate of about forty loads to the acre, with barn-yard manure. The potatoes were planted as soon after the first of May as the ground could be prepared. They were hoed twice: after the first hoeing, about a gill of two-thirds house ashes and the remainder plaster of Paris, was put on each hill. The potatoes were of different kinds. They were dug about the 1st of October, and were planted, hoed and dug in the usual way, without reference to being an applicant for a premium from the society.

LEWIS COUNTY.

To the Executive Committee of the N. Y. S. Ag. Society.

Gentlemen—The officers of the Lewis County Agricultural Society, respectfully submit for your perusal the following report:

The Annual Fair of the society was held at Lowville, on the 23d and 24th days of September 1846. The attendance was much larger and more general than at any previous meeting, and the increased interest shown in the subject by the great body of our farmers and mechanics, shows clearly that our cause is onward and our improvement in agriculture progressive. The exhibition of domestic animals, including horses, cattle, sheep and swine, was highly respectable both as to numbers and quality. The productions of the farm and the garden together with the specimens of household manufacture were equal in every respect to any previous exhibition.

Premiums were awarded in cash to the amount of $139; in addition to this, there were also given as premiums, thirteen volumes of the Transactions of the New-York State Society and forty-one diplomas.

The address was delivered in the afternoon of the first day, by D. P. Mayhew, A. M., who, though not a farmer by profession, evinced a thorough knowledge of the science and theory of the great subject he came to discuss.

The second day was devoted principally to the plowing match, which was peculiarly interesting, and which called out a large number of spectators to witness it. The plowing done showed a skill and knowledge of the work, highly creditable to the plowmen.

The annual meeting of the society was held at Martinsburgh, on the 17th day of December, 1846. At this meeting the premiums on grain and root crops were awarded, and the following officers were elected for the ensuing year.

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Norman Gowdy, President. Homer Collins, Jesse Talcott, Asa L. Sheldon, Harrison Blodget, William McCullock, George Ives, and D. H. Higby, Vice Presidents. William King, Corresponding Secretary. John Benedict, Recording Secretary.

Our county is probably better adapted to dairying than any thing else, situated as it is, far from any reliable market, possesing none of the advantages of many of our neighboring counties in respect to transportation, &c. There is not that attention paid to the raising of grain, which would be perhaps, under circumstances more favorable, yet notwithstanding this, there were many excellent crops raised last season; as a specimen of which we present the following on which premiums were awarded, accompanied by the statements made by the several competitors:

Best	acre of	winter wheat, ...	29⅛	bushels.
	do	spring wheat, ...	28⅛	do
	do	corn, ...	92	do
2d	do	corn, ...	78	do
	do	barley, ...	48 13/50	do
	do	peas, ...	48	do
	do	½ acre potatoes, ...	162	do
	do	oats, ...	91	do

All of which is respectfully submitted,

NORMAN GOWDY, *President.*

J. BENEDICT, *Secretary.*

Lowville, N. Y. Dec. 31st, 1846.

Winter Wheat—N. Water's statement.

Land in low condition; no manure having been applied for eight or ten years. Sowed after barley; drew on fifteen loads of coarse unfermented manure to the acre; plowed once, seven inches deep; sowed about the 25th of August.

Indian Corn—N. Water's statement.

Land in good condition; in potatoes last year, without manure; spread on twenty loads of manure and plowed in seven inches deep; furrowed for rows four feet apart, and spread fifteen loads of manure in the furrows, and covered the manure by turning the furrows together. Planted the fifteenth day of May in double rows one foot apart, like saw teeth; put on an average five kernels in a hill; scuffled and hoed three times without hilling; applied four and a half bushels of plaster, lime and ashes of equal parts; second hoeing, thinned to three spears in a hill. Yield, 91 55-100 bushels.

Expense of cultivation, $22.53. Product, 45.99.

Barley—Samuel Hill's statement.

Soil, clay and loam; previous crop potatoes; planted on green sward; no manure used; no manure on crop the present season;

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Plowed once the first of May; sowed two and a half bushels of two rowed barley on the acre; harrowed well and rolled; harvested the first of August. Product 48 bushels per acre.

Expenses, $12.38. Value of product, $26.00.

Manufacture of Cheese—James Rees's statement. Turin.

Number of cows kept 46; cheese made from two milkings, without any addition of cream; cows kept on grass only; use tin vats and scald with hot water; rennet prepared in the usual way, by soaking a number in a jar at the same time, and using enough to coagulate the milk in from half to three-quartes of an hour; use three pounds of salt to 100 pounds of curd; pressed with old fashioned lever press, 48 hours, lightly at first; turn three times while in the press; think it important to turn on shelf at night the first day, to prevent the cheese from spreading out of shape: average weight of cheese from 1st of May to 1st Sept., 100 pounds.

LIVINGSTON COUNTY.

B. P. Johnson, Esq., *Secretary.*

Dear sir—In answering your inquiries regarding the operations of the Livingston County Agricultural society for the past year, I can only glance at a few prominent matters which have come under my observation. It had been determined to transfer the scene of the Annual Fair and plowing match from the centre of the county to the beautiful village of Avon, with a view of interesting many in these exhibitions who perhaps would not otherwise participate in them. Accordingly, in May last premiums were offered for a plowing match; the competitors were to be divided into four classes: 1st, a horse team and man; 2d, an ox team and man; 3d, a horse team and boy; 4th, an ox team and boy; each to drive and manage his own team and plow. At an early hour the spacious grounds allotted for this trial of skill, were filled with a greater concourse of the yeomanry of the county, than I had ever seen on any similar occasion. Between thirty and forty teams were entered in the various classes for competition. The work was done in a very satisfactory manner, and left no doubt of the great improvement which had taken place in the art of plowing, as well as in the excellence of the plows. It was admitted on all hands, that this plowing match excelled its predecessors in the excellence of execution, and the great interest manifested in the performance. The day was fine, and the whole was conducted in good order, and ended with the best possible feeling.

The cattle show and fair was holden at the same village in the autumn, 24th September, and from the immense number of persons present, and the apparent deep interest which was taken in the exhibition, I have no doubt of the increasing popularity and usefulness of these annual exhibitions. The range of pens enclosing sheep of various grades, and swine, and calves, was quite creditable

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both in character and number. A large array of very fine bulls, and many superb oxen, steers, and cows, attracted considerable attention. I noticed several pairs of matched and single horses of extraordinary beauty; one pair (and that not the premium pair,) have since been sold in Rochester for a thousand dollars. Much attention is given in our county to the breeding and rearing cattle of the best quality.

The yards adjacent to the academy were well stored with agricultural implements, and labor-saving machines; among which, was the improved Wiard's gang plow, and the steel tooth cultivator drag, each of which has grown into favor with our wheat growers of Livingston. A great variety of threshing machines, plows, and straw cutters were exhibited.

The interior of the academy was devoted to the show of dairy products, articles of domestic manufacture, beautiful specimens of sewing silk, cocoons, embroidery, &c., &c. These, with the pyramids of apples, pears and peaches, and baskets of grapes, set out with garlands of flowers, and surrounded with a throng of farmers' wives and daughters, made it the great point of attraction. After the premiums were awarded, the officers were elected, and a resolution taken that the next exhibition should be holden at Geneseo. Not having a list of the officers before me, I am unable to give you the names of the officers, further than Allen Ayrault, president, Benjamin F. Angel, secretary, both of whom reside in Geneseo. Gentlemen to whom premiums have been awarded, have left them in the hands of the treasurer, with which to purchase a portable fence for making pens, &c. Such fence is manufactured for less than a dollar a rod, and bears considerable resemblance to the one in your agricultural room in Albany, and is capable of being put up and removed with great facility and little expense. From the intelligence I have derived from many gentlemen, as well as from my own observations, I feel warranted in assuring you that the agricultural interests of Livingston county have never been in a more flourishing condition. With the single exception of a blighted potato crop, the whole range of products were abundant.

The desire to combine science with labor, and to expand the mind so as to grasp and make available the discoveries which are poured out from the laboratory of the chemist, is daily increasing; and I think the time has come when these matters, so intimately connected with the interests of the "toiling millions," should be made an elementary study in our common schools.

Most respectfully,

I am yours,

C. H. BRYAN.

March 29, 1847.

Since the above was received, we have been favored with a letter from C. Hawley, late secretary of the society.

He says, that the whole proceedings at their annual fair gave ample evidence that the farmers of Livingston county had lost none of

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their interest in the annual exhibi ions, or that they had relaxed in their efforts to make them profitable and useful. No crops, however, were offered for premiums.

The amount offered for premiums was $375, besides a number of Vol. Transactions of the State Society, Colman's Tour, &c. The amount paid for premiums was about $275, and there is a surplus of funds on hand of about $60.

Officers elected for 1847:

Allen Ayrault, President, Geneseo. H. Long, 1st V. P. H. Hitchcock, 2d V. P. J. R. Murray, 3d V. P. Benj. F. Angel, Secretary, Geneseo. Charles Colt, Treasurer. And fourteen county managers.

MADISON COUNTY.

The Madison County Agricultural society has been prosperous during the past year, and has been sustained with as much interest as heretofore.

The fifth Annual Fair was held at the village of Eaton, on the 22d and 23d of September, and was attended by a very large concourse of people. It passed off in all respects satisfactorily, and was considered in some points superior to any previous fair. The show of stock was large, and, particularly in cattle and sheep, of great excellence. Very few grain crops were submitted for competition. This was caused, in great part, by the mischief done by insects in the grain growing towns, where some crops of wheat were so ruined as not to be worth harvesting, and most fields seriously injured by the fly, or as it is commonly called, "the weevil." Potatoes were also absent from competition, as the "rot" has done much damage. The show of dairy products was good, and of cheese particularly, which was large and of general fine quality. Every successive fair has shown a general improvement in the cattle, sheep, butter and cheese exhibited, an improvement which is doubtless owing, in a considerable degree, to the action of our county society, which has fostered emulation, and established higher standards of excellence than were before generally known.

That part of the exhibition devoted to the display of domestic manufactures, and products of female industry, was as usual, one of the chief attractions of the f.ir.

An eloquent and interesting address was delivered by Horatio Seymour, Esq., of Utica, to a crowded and attentive audience, and the fair came to its conclusion amid general gratification.

The society adopted a new plan in awarding its premiums. Heretofore it has followed a bad, though general practice, in giving diplomas as third or fourth rate premiums, when it would give nothing else. These diplomas have thus become in fact, testimonials of inferiority—certificates that the possessor was beaten in compe-

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tition by several of his neighbors. They were, consequently, worthless.

For the last fair, the society procured the handsomest diplomas attainable, had them beautifully colored by a good artist, and neatly framed and glazed, so as to form handsome ornaments for the parlor. About fifteen of them were then distributed as first premiums to those who were considered entitled to prizes of highest rank, instead of money, which was paid in premiums on articles of less importance or secondary merit. They thus acquired great value in the eyes of those who properly consider *credit*, and not a small pecuniary profit, the chief incentive to competition, and will no doubt long hang on the walls of their receivers, at once ornaments and testimonials of well-directed industry.

Premiums of lowest rank, for which cheap diplomas were formerly given, are now supplied by the offer of a year's subscription to the Cultivator, or any agricultural paper of no greater price.

At a recent meeting of the executive committee, the society was found to have a considerable balance in its treasury. There is no doubt of its being able to give another creditable fair, but its continued existence very probably depends on the extension of the State patronage for future years by the Legislature. It is a matter of difficulty to collect more in the way of subscriptions than heretofore, without devoting more time to exertion than the officers of the society can conveniently spare; and the solicitation of subscriptions is an unpleasant task, from the variety of excuses and reluctance to contribute, which are far too common among those who are able, and should be willing, to bear a small share in the expenses of so useful an institution.

At the same meeting, premiums were awarded for the best crops of corn and carrots, raised in 1846. I send herewith a paper, giving the statements of these crops. They are believed to be accurate, and the corn crops are doubtless more to be relied on than the crops of 140 bushels or more, on which so many premiums have been given. The corn mentioned in these statements was measured when properly dried, and in good merchantable condition.

The areas of land on which they were raised is not certified to in the statements, but were no doubt fairly measured. Mr. Enos's was sworn to by a surveyor, who measured it with chain and compass. The Messrs. Powell made a satisfactory affidavit of the measurement of their piece.

The officers of the society for the present year are—

John Williams, of Cazenovia, President. Benjamin Enos, of De Ruyter, Samuel French, of Sullivan, S. B. Burchard, of Eaton, Vice-Presidents. Alpheus Morse, of Eaton, Treasurer. Thomas A. Clark, of Sullivan, Chittenango P. O., Corresponding Secretary. Ledyard Lincklaen, of Cazenovia, Recording Secretary.

By order of executive committee.

LEDYARD LINCKLAEN, *Secretary.*

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Reports and Statements on Crops.

First premium on corn, a Diploma, to Lewis B. and Edward A. Powell, of Lebanon, for the most profitable crop, being 105 bushels and 25 pounds from an acre, giving a net profit of $35.45.

Second premium on corn, $3, to Benjamin Enos, for a crop of 111 bushels, 52 pounds to an acre, giving a net profit of $34.65.

First premium on carrots, a Diploma, to Seneca B. Burchard, for a crop of 1,175 bushels to the acre.

Indian Corn.

Statement of Lewis B. and Edward A. Powell, of Lebanon, of their crop of corn, on which they received the first premium:

Extent of ground, one acre. Soil gravelly. The land had been pastured for six years previous to its being plowed last spring. It was plowed the first of May, and then harrowed down smooth, then furrowed to six furrows to the rod. The corn was planted the 7th of May, eighteen inches in the row. The manure, being seventeen loads, was put on the ground in the previous November. The corn was hoed three times. Ten quarts of seed corn were used in planting. Corn sold October 19th and 20th. On the same ground were raised 1,160 good pumpkins (without counting many little ones).

Expenses.

Manure,	$4 25
Spreading do.,	0 38
Plowing,	3 00
Harrowing,	2 00
Seed,	0 30
Planting and hoeing, seven days work,	4 38
Plaster,	0 50
Harvesting,	6 00
Interest on value of land,	3 50
	$24 31

Receipts.

Corn, 105 bushels, 25 pounds, 56 pounds to the bushel,	$52 70
Stalks for fodder, worth	6 00
Allow one-fourth of the manure for benefit of future crops,	1 06
Total receipts,	$59 76
Deduct expenses,	24 31
Profit on an acre,	$35 45

The statement of Benj. Enos, Esq., of De Ruyter, of his crop of corn, will be found among the reports of the State Society, antepage 164. The decision of the committee was a matter of some difficulty. Both crops were excellent, and of very nearly equal profit.

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Carrots.

Statement of S. B. Burchard, of a crop of carrots: One acre, sowed the first Monday of May, with one pound of seed. The ground a green sward, plowed just before planting, seven inches deep, and well furrowed with a harrow; planted with a drill barrow; the rows eighteen inches apart; the weeding commenced about the middle of June; done by running a small cultivator between the rows. The labor at the first weeding was six days' work. The two other dressings three days each. Planting one day; labor in all, thirteen days; harvesting, eight days. Total amount of crop per acre, 1,175 bushels. Land a gravelly loam.

MONROE COUNTY.

The Annual Fair and show of this spirited society was held at Rochester on the 15th and 16th of October, and in point of excellence it is said to have exceeded any of the previous exhibitions of the society. The number in attendance was large, and the interest manifested, such as cannot fail of diffusing a good feeling among the agricultural population of the county. The display of horses was very creditable, though not as many in number as might have been expected. The exhibition of cattle was extremely fine. *Devon* cattle by Mr. Garbutt, of Wheatland, and *Hereford's* by Mr. Hyatt, and several lots of *Short Horns* from several of the towns were presented, and attracted much notice.

The exhibition of fruits and vegetables was excellent. Among other vegetables, a basket of *sweet potatoes* was exhibited by Mr. James M. Whitney, of the town of Greece. The exhibition of domestic manufactures was not as large as usual. Most of the articles were presented by the ladies from the country, and but few from the city. The committee remarked, "that they regret so few articles were exhibited, and think the ladies of Rochester and Monroe county are either less enterprising, or far more retiring than their sisters in other counties."

The exhibition of agricultural implements was good; several attracted much attention.

A number of very fine straw cutters were exhibited, which attracted, as this article always does, a vast deal of attention from agriculturists. As it is now generally conceded that there is a great saving in wintering stock, by preparing their food properly, almost every farmer is providing himself with a straw cutter. The one which attracted the most notice, is that known as "Sanford's patent." It cuts with remarkable facility, and leaves the feed in such a state that there is not the least danger to be apprehended of injury to the animals.

John Parks, Gates, exhibited a Yorkshire ham, put up last Christmas, (interesting from the fact of its being cured to suit the English market) in excellent condition. Also, two bladders of lard, put up

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at the same time; their white and pure appearance, and freeness from all foreign matter—the sweet taste of the lard without the rancidity of the American article—renders it an article of great interest. Lard and hams cured in this manner must, at a trifling or no expense, greatly enhance their value for home use or exportation. The committee recommend them to the consideration of the society, and that Mr. Parks be requested to furnish recipes for curing hams, and trying and putting up lard, and award to Mr. P. a Vol. Trans.

The annual address was delivered on the first day of the fair, by Dr. D. LEE. It was able, practical and appropriate, and listened to with attention and satisfaction, by a large audience.

On the second day an address was delivered by J. B. NOTT, Esq., Corresponding Secretary of the State Agricultural Society. Also, some remarks by Dr. LEE.

At the annual meeting of the Monroe County Agricultural Society, held Dec. 8th, the following named gentlemen were elected officers for 1847, viz:

Samuel Miller, of Penfield, President. George C. Latta, of Greece, Romanta Hart, of Brighton, John Rowe, of Riga, Vice Presidents. James P. Fogg, of Rochester, Treasurer. James H. Watts, of Rochester, Recording Secretary. Josiah W. Bissell, of Rochester, Corresponding Secretary.

The Treasurer made the following report:

1846—Dec. 4. Amount of cash on hand, November 8, 1845,		$68 31
Amount received from members,		196 00
" " the State,		194 00
		$458 31
December 4—Paid receipts, number 157 to 212, inclusive,	$172 00	
Paid for books for premiums, and expenses of the society,	176 88	
Paid for Dr. Lee's lectures,	20 00	
Cash on hand,	89 43	
		$458 31

JAMES P. FOGG, *Treasurer.*

Field Crops.

The society cannot but regret that in the county that produces one-tenth part of all the wheat grown in the State of New-York, there should be no applicant for any of the premiums offered on field crops, when it is within the knowledge of many members of the society, that several crops were made in this county, by members of this society, particularly wheat and corn, probably second to none in the State, but from neglect of measuring and certifying, they were excluded from entering for premiums. It is to be hoped that the farmers in this county will not in future be deterred from

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entering their field crops, on account of the trouble to which the necessary regulations of the State Society, to prevent imposition, may subject them.

Reports of the committees on farms.

The committee for the east side of the Genesee river, award as follows: To Rufus Beckwith, of Henrietta, the first premium of $4, and Colman's Reports. To Zera Burr, of Perrinton, the second premium, $3 and 1 Vol. of Transactions. To John McGonegal, of Irondequoit, the third premium, $2 and Washington's Letters. To George L. Beckwith, of Henrietta, the fourth premium, $1 and 2 Vols. Genesee Farmer.

The following communication was then read from Wm. Garbutt, Esq., of Wheatland, chairman of the committee on farms for the west side of the Genesee river.

The committee on farms, for the west side of the river, would respectfully report: That they commenced their pleasing task on the last of June, and in three days took a hasty view of the various towns; but the unusual forwardness of the season rendered the farmers all so busy that they had not leisure to attend on the committee, so that they concluded to postpone further operations until the last of September. But unavoidable circumstances prevented their meeting; yet from what they saw, they would respectfully state that the general aspect of the county was delightful. Crops in general, (with the exception of corn, which in many instances was much injured by the worms) bid fair to yield a bountiful return to the husbandman for his toil. And we cannot refrain from congratulating our farmers on their happy lot, blessed with a healthful climate and a productive soil, convenient to market, and accessible to all the rational enjoyments of social life; and when blessed with health, *if not independent and happy, the fault is their own.*

The extensive fields of wheat were splendid, and in most sections a spirit of improvement was evinced; and the many well cultivated farms which we visited convinced us that the farmers of Monroe were not last in agricultural improvements.

But when we look at the statistics of the county, and see that the average wheat crop is only 19¼ bushels per acre, corn 30, barley 19, oats 32, rye 10, potatoes 110, and other roots only 180 bushels per acre, and then examine the reports of the committees on field crops, we cannot avoid being forcibly impressed with the great difference in amount per acre, on the average crop, *and the select pieces.* And it speaks in language not to be contradicted, that farmers are deficient in their general culture, and that it is susceptible of great improvement.

To point out the numerous means within the reach of the farmers to enrich the soil, and enhance the value of their labor, or to state all the defects in the general cultivation, would much exceed the bounds of this report. Yet they will state what appears to them to be the most prominent ones, and let the farmers test them for themselves.

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We would earnestly recommend to every farmer to keep an agricultural journal, and enter down all the principal operations on the farm, and keep an exact account of debt and credit, so that they can know each year the exact amount of their profit and loss.

And we feel confident that we cannot too strongly solicit their earnest attention to *agricultural reading and annual exhibits*—knowing that they are powerful prompters to active industry, and the most efficient means of acquiring agricultural knowledge.

Plaster and barn yard manure are within the means of every farmer, but not sufficiently valued as fertilizers of the soil.

With but few exceptions, there is too much ground cultivated for the labor to perform it. *If one-fourth*, (and in many instances one-third,) less ground was cultivated by the same amount of labor that is now done on the whole, there would be equally as much produce raised, and more profit realized.

Plowing is generally done in *too much of a hurry, too shallow*, and too wide a furrow slice, for a thorough cultivation, and the value of the harrow is not sufficiently realized. The more frequently that the surface of cultivated ground can be pulverized the better, and especially in dry weather. And the use of the roller in pulverizing is too much neglected.

Pastures are generally cut too close. A bare pasture improves not the soil, nor fattens the animals, nor makes the owner rich.

On the most difficult part of their duty, viz: that of awarding premiums, they would respectfully state, that from the limited means they had of judging, it was impossible for them to select three from amongst the many well cultivated farms which they examined, that they could say had the decided preference over the others, without the fear of doing great injustice to many.

MONTGOMERY COUNTY.

The Annual Fair of the Montgomery County Agricultural Society, was held in Amsterdam; and although the arrangements for transportation were not generally known through the county, and the day preceding being very stormy, still much of the "beauty and chivalry" of Montgomery were here. Our citizens sent in specimens of the useful and the beautiful, which we are told have not been equalled at any former fair.

We shall not be able to specify minutely. We noticed farm implements from the iron foundry of T. J. Potter & Co., of our village, which show them to be masters of their profession. Neighbor Shires presented a sample of cooking stoves with castings smooth as polished marble. The edge tools presented by Case & Pardee, were of burnished steel, and equal, in our judgment, for style and finish, to the productions of the famous Sheffield works. The oxen from Florida, and Durham cows of neighbor McElwain and Sample, were worthy the emulation of the farmers of the county. C. Phil-

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lips of Florida, and D. Mosier of this town, were here with specimens from their flocks, and we could but wish for a "Sunday coat" from one of their fleeces. The matched horses of I. Jackson and J. Livermore, attracted general admiration, and made us think of the fabled steeds of Diomede.

The first object which met our eye at the variety hall was Madame Felina, a mammoth puss of age and experience, who assured us that she was present in proper person at the whole scene of St. Ives.

The specimens of needle work and embroidery exhibited by Miss A. C. Gurtner of Canajoharie, and Miss E. Cook of Palatine, and several of our own ladies, seemed to rival the feats which we have heard the old Phrygian matrons used to perform with the needle. For vegetables, fruits and flowers we were indebted to Mr. Coates, who contributed much to our variety; indeed Ceres seemed to have emptied her horn of plenty.

> **And Flora came to cheer away the hours**
> **With tender nosegays and with blooming flowers.**

The annual address was pronounced by John Frey, Esq., of Palatine, to a crowded house at the Baptist church. All who heard it, seemed to have been entertained, informed and convinced. We shall not forestall opinion by giving a synopsis, for we are informed the orator has yielded to the general wish and will submit a copy for publication. The next Annual Fair will be held at Fultonville.

The officers elected for the current year are: Cornelius Gardiner, President. Jeremiah W. Gardiner, Isaac Jackson, Vice Presidents. D. D. Starrin, Secretary. James Lansing, Jr., Treasurer. Wm. B. Wemple, Jacob S. Glen, Henry P. Voorhees, John C. Yost, G. F. Van Vechten, Executive Committee.

NIAGARA COUNTY.

To the Executive Committee of the N. Y. S. Ag. Society.

The undersigned, President of the Niagara County Agricultural Society, in pursuance of the statute, submits the following report:

That an Agricultural Cattle Show and Fair was held in said county on the 7th and 8th days of October 1846. There was a fair display of stock at the cattle show and a large proportion of it of fine quality. The attendance at the exhibition was good, better than usual, and a very good spirit seemed to prevail. There was not so many articles for premium entered at the fair, as the year previous; but the articles were such as to merit general attention. The attendance at the fair was unusually large, and the affair went off in a very spirited and happy manner. Much interest was added to the occasion by the practical address of Mr. Nott, Secretary of the State Society.

The whole amount of premiums awarded was $210.75, of this amount $205.25 have been paid, and $5.50 have not been called

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for or paid, and there is now in the hands of the Treasurer of this society some $98 or $99.

I herewith forward to you the statements required to be made by law, by those to whom premiums have been awarded, so far as I have been able to obtain them.

All which is respectfully submitted.

HIRAM McNEIL.

Lockport, Dec. 26, 1846.

Winter Wheat—H. McNeil's statement.

The soil upon which the wheat crop was raised, is loam mixed with clay. The ground was in pasture the previous year; summer fallowed; three times plowed, twice harrowed before seeding and twice afterwards, and then rolled; one and a half bushels of white flint wheat sowed to the acre, about the 10th of September. The quantity raised was 39½ bushels per acre.

Expenses, $11.54. Value of product, $27.16.

Indian Corn—D. Newhall's statement.

Soil quite sandy; previous crop, spring wheat, sowed on a clover sod which was killed out; spread on the land seventy loads of horse manure; plowed about the first of May; commenced planting on the 10th of May; marked out the rows, running them north and south, with a hand plow, one pace apart; one-half acre was measured with a line very exact. From this I husked 58 baskets and shelled one of them, which would average with the rest, which yielded 45 pounds; making 47¼ bushels on the half acre. The hills were about eighteen inches apart, with two or three stalks in a hill. I measured and cultivated another half acre the same as above, except the hills were three feet apart, and the yield was 42 bushels. Hoed the corn three times; on the first half acre raised 600 pumpkins and on the other 700. Yield 89 bushels per acre.

Expenses, $11.25. Value of product, $59.50.

Carrots—Rivera Steven's statement.

Soil, fine black muck or mould, resting on a clay subsoil; previous crop corn, then potatoes, no manure used; the crop was drilled the first week in May, at the rate of two pounds of seed to the acre; in rows twenty inches apart; but think that sixteen inches would have been better; the seed was sown dry; came up fine; harvested from one-eighth of an acre, the quantity under cultivation, 98 bushels, at the rate of 784 bushels per acre, costing about nine and a half cents per bushel.

There were two reasons why the crop was not larger. First, the rows were one-fifth further apart than they should have been; and the other, they were harvested when about three-fourths grown. I think there would in most seasons, be a great loss in the crop by harvesting in October.

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ONEIDA COUNTY.

In making our annual report for the Oneida County Agricultural Society to the parent institution, I feel myself absolved from the necessity of making any protracted remarks on the geology, locality, climate, soil, and productions of our county, or on the origin and past history of our society, inasmuch as my predecessors in office have so amply and correctly done this in former reports. I will therefore confine myself to the present condition and interests and future prospects of our society and of agriculturists of this region.

I think I may safely say, our society is in a highly prosperous condition, more so indeed than it has ever been. The interests of its members and of the surrounding community in the pursuits and prosperity of agriculture, has rather increased than diminished for the past year. An increased circulation of agricultural publications, an increased interest in the Annual Fairs and exhibitions, a greater perfection in the animals, productions of the soil, and articles of domestic manufacture, a greater number of competitors for the premiums offered for these, and in the plowing match, (which this year has exceeded in interest and perfection of work any that has preceded it,) together with the increased amount of funds now in our treasury, as will be seen by the accompanying report, sufficiently attests this fact.

It is true, we cannot sucessfully compete in growing wheat with the great wheat growing counties of Western New-York, or with some of the Western and newer States. Nor do we flatter ourselves that, with the present price and real value of land with us, and the prices which wool has lately borne, we can grow wool with as much profit as it can be done in more mountainous regions where land is fit for little or nothing else, or on the broad prairies of the west, where many of the wool growers use land not their own or get it for a thirtieth or fiftieth part of what it is worth with us. But our county is not unproductive, nor unprofitable in other branches of agriculture of equal importance and value to community, with those above named. We have, in general, a strong and rich soil of land, abundantly productive in the coarser grains, (which will seldom bear transportation from the far west,) such as barley, oats, Indian corn, peas and root crops, of almost all kinds. Potatoes, though formerly an excellent crop, it is true have here, as in almost all sections of the country, suffered by the blight, the cause and cure of which I will not attempt to discuss where so many have essayed and failed of throwing any satisfactory light on the subject. I will only recommend, as the result of my own reflections and judgment in the matter, *early planting* on soil *not too rich*, nor much manured, with a moderate application in the hill of ashes, either leached or uleached, or for want of these, perhaps mixed with them, a small amount of lime, with a very little salt. I believe such a course, nine cases out of ten, would save the potato crop.

But the great staple product and reliable source of profit and

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thrift with our farmers of Oneida county, is that of the *dairy*. This while it gives to the farmer almost certainly, a fair and liberal return for his outlay and labor, and furnishes to our great commercial cities, and to foreign countries, a necessary and wholesome kind of provision, for which there is yearly an increasing demand, at the same time increases the fertility of the soil and improves our farms in value. Dairy farms, instead of being, like farms cultivated in grain only, skinned and made poorer every year, are constantly increasing in value. The cultivator of the dairy farm plows but little comparatively, and hence, from the large stock of cows he keeps, is enabled to manure very highly what he does plow, and to raise large crops of corn and other coarse grains and roots, such as he needs for his family and stock; and mainly from the slops of the dairy house, to make his own pork and some for the market. Hence, our dairymen are generally thrifty and well to do in the world, and many of them become comparatively rich in a few years.

The annual State bounty, which I believe is richly merited by and deservedly bestowed upon the agricultural classes of community, and which I cannot but hope will be long continued, has aided much in connection with individual exertions, in bringing about the present prosperity of our society. We are thankful for the past and encouraged for the future.

The accompanying statement from our Recording Secretary, which I have carefully examined and believe to be correct in all things, will give you the statistics of our society for the past year, its officer's doings and condition in detail.

All which is most respectfully submitted,

D. SKINNER.

Deerfield (near Utica,) Jan. 2d, 1847.

From the statement made by B. N. Huntington, secretary of the society, which is prepared with great care and gives a full and complete statement of all the proceedings of the society during the past year, we give the following abstract:

The annual meeting of the society was held January 8, 1846, for the election of officers and awarding premiums on field crops. A balance was then in the Treasury of the society of $240.30. A meeting of the officers was held on the 28th of February, when a premium list was prepared, as follows:

Cash premiums, $546; Transactions of State Society, 44 vols.; and 37 diplomas.

The Annual Fair of the society was held in the village of Whitesboro on the 24th and 25th of September.

Number of entries.—Horses, 74; swine, 29; cattle, 113; sheep, 147. Dairy—cheese, 10 samples; butter, 8 samples; apples, pears, &c., 11 samples; Vegetables, 7 lots; plowing, 11 competitors; dis. articles, 54; ladies department, 95.

Amount of premiums awarded, $429.50; 29 vols. Transactions, and 39 diplomas.

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The annual address was delivered by the President of the society, and published in the papers of the county, and received the merited commendation of all who have read it, as well as the expressed approbation of those who listened to it as it was delivered.

The statements of the competitors who received premiums, all of which are prepared with great care and in strict compliance with the law of the State, accompany the report of the Secretary.

The annual meeting for the election of officers for 1847, and awarding premiums on field crops, was held on the 7th of January.

Premiums Awarded.

Grain. Indian Corn.—1. Charles W. Eells, Kirkland, 123 bushels 27 pounds per acre. 2. George K. Eells, Westmoreland, 103 bushels 46 pounds per acre. 3. Robert Waterman, Westmoreland, 90 bushels 10 pounds per acre.

Spring Wheat.—1. Robert Eells, Westmoreland, 20 bushels 42 pounds per acre. 2. Robert Waterman, 21¼ bushels per acre.

Barley.—1. S. H. Church, Vernon Centre, 56 bushels 1¼ per acre. 2. Wm. C. Burrett, Marshall, 48 bushels, 36 pounds per acre.

Oats.—1. Wm. C. Burrett, 102 bushels 19 pounds per acre. 2. S. H. Church, Vernon Centre, 57 bushels 3 pounds. 3. Robert Eells, Westmoreland, 57 bushels 27 pounds. N. S. Wright, extra premium for 79¼ bushels per acre.

Peas.—1. Amos Miller, Vernon, 55 bushels 12 pounds per acre. 2. Edward Rivenburgh, Vernon, 36 bushels 51 pounds per acre.

Roots. Potatoes.—2d premium, Wm. C. Burrett, Marshall, (quality and quantity,) 74$\frac{9}{60}$ per half acre. S. H. Church, Vernon, (quantity only,) 115 bushels 27 pounds per half acre.

Ruta Bagas.—Pliment Mattoon, Vienna, 159 bushels 17 pounds per quarter of an acre.

Carrots.—Wm. Wright, Vernon, 250$\frac{1}{4}\frac{0}{5}$ per quarter of an acre.

OFFICERS, 1847.—President, Ira S. Hitchcock, Oneida Castle. Henry Rhodes, South Trenton, Corresponding Secretary. James Reese, Utica P. O., Recording Secretary. Benj. N. Huntington, Rome, Treasurer. Oscar B. Gridley, Marshall; Thomas Horton, N. Hartford; Calvin Bishop, Verona; Wm. Bristol, Utica; Storrs Barrows, Trenton; Luther Comstock, Kirkland; Horatio N. Carey, Marcy; Plyment Mattoon, Vienna; Henry B. Bartlett, Paris; Levi T. Marshall, Vernon, Vice Presidents.

Oats—Wm. C. Burrett's statement, Marshall.

The soil on which the crop of oats entered for premium was grown, is muck; and the previous crop was potatoes. The land was plowed once, six inches deep and was dragged and rolled. There was no manure used on the crop; the grain sowed about the 1st of May, three bushels of seed being used to the acre. The crop was harvested and the grain measured and weighed; and yielded by

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measure 99½ bushels per acre, and by weight 102$\frac{19}{32}$ bushels. Expenses, $12.93. Value of product, $29.38

Peas—Amos Miller's statement, Vernon.

Crop of peas raised on one acre of land. The condition of the soil, which was a gravel and clay loam, was fair; the previous crop was Indian corn. The land was plowed once, ten inches deep, and then harrowed; and the peas sowed at the rate of four bushels to the acre, and covered with the cultivator, on the 12th of April. Harvested with the scythe, and cleaned in a common fanning mill, and yielded 55 bushels 12 pounds to the acre. Expenses $10. Value of product, $37.50.

Town Association.

In the town of *Vernon*, Oneida county, an association was organized in December, 1845, and weekly meetings were held, at which reports were made and discussions had upon subjects relating to agriculture, which were productive of much good. A *fair* was held in the fall, which excited much interest and would compare well with county exhibitions. This association continues its organization, and will prove a valuable auxiliary to the county and State associations. We give an extract from the report of the committee, consisting of the Hon. *Pomeroy Jones*, *Salmon Case*, *Timothy Jenkins*, and *Fitch Howes*, and would recommend to other towns to organize associations of this character, from which much good would doubtless result to the agricultural interest.

Vernon Fair and Cattle Show.

The committee appointed by the Vernon Agricultural Association "to examine the several varieties of stock and other articles, exhibited at their town fair on the 7th day of October, 1846, and make a report of their survey, &c.," respectfully report:

That to the best of their ability they have performed the duties assigned them, not however, without great diffidence, for the limited time allotted them, and the great variety of stock entered, as well as the splendid exhibition in the Ladies Department, at "Floral Hall," would seem to preclude the possibility of one committee doing ample justice.

It has been a proud day for the town of Vernon. Her farmers and citizens, for want of other competitors, have outdone themselves. It is believed that no town in the State has received as many premiums from the State or county societies.

The exercises in the church were appropriate. The Throne of Grace was eloquently and fervently addressed by the Rev. Mr. Emmons. The singing by the choir showed that Vernon's fair sons and daughters, so skilful in their vocations—

> "Plow their furrows deep and wide,
> Swing the scythe and cradle,
> Wives and daughters ply the loom,
> Cheese press, churn and ladle,

could also discourse music most eloquent. The address of the

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President, Ira S. Hitchcock, Esq., was full of instruction and sentiment and appropriate in diction.

Cattle.

The neat stock on the show ground attracted our special attention. The number far exceeded the expectation of the most sanguine. The early introduction of the Devons into this town has given the stock a character that it is believed cannot be exceeded by any town in the State.

Master I. B. K. Church and his admirable pair of two years old Devon steers. It is difficult to decide which most to admire, the beauty of these nicely formed animals and the curious evolutions they exhibited, or the patience and ingenuity of their young master who trained them.

Horses.

There was an unusual display of fine horses.

Sheep.

The exhibition was not large, but very fine. This town eclipses all others at the State fairs in full blooded Saxons.

The fruit and culinary departments were well represented. These branches of farming are beginning to attract attention worthy of their importance.

Ladies' Department.

The exhibition at "Floral Hall" afforded proof that the other sex had not fallen behind the farmer in industry, and had surpassed him in ingenuity and taste. The committee of ladies report "that among the articles exhibited, they find many beautiful specimens of skill and industry, deserving of high commendation."

In conclusion, we would remark, that in our opinion this fair will have a favorable and salutary influence upon the industry and agricultural products of the town of Vernon, and that each succeeding fair and exhibition, will be an epoch in agricultural improvements, and will convince the farmer that the sphere in which he moves is yet, as it always has been, the first in interest and importance.

ONONDAGA COUNTY.

To the New-York State Agricultural Society.

The undersigned respectfully submits the following statement of the condition of the Onondaga County Agricultural Society.

The Annual Cattle Show and Fair was held on the first and second days of October at Syracuse. The assemblage of people was by far larger than we have had at any preceding fair; and the show of cattle, horses, sheep, and of the products of the dairy, and of fruits and flowers, and of domestic industry, surpassed in numbers

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and in quality, all that has gone before. In many particulars, our show would not suffer by comparison with that of the State society.

During the past year, farmers' conferences have been held in most of the towns of the county, at which, subjects of interest to the farmer have been discussed freely and thoroughly, and important truths elicited. The newspapers of the county have given general circulation to the doings of these conferences, and public attention is fairly awakened to the great interests of agriculture.

During the year, we have paid four hundred and seven dollars in premiums; and there is now in the hands of the Treasurer a sufficient sum to justify the society in purchasing suitable canvas for the protection of fancy articles, &c., at the coming fairs.

The following officers were elected for the coming year.

George Geddes, Fairmount, President. James M. Ellis, Onondaga Hill, 1st Vice President. Samuel H. Hinsdale, Pompey, 2d Vice President. John B. Burnet, Syracuse, Recording Secretary. Seth Hutchinson, Onondaga Hill, Corresponding Secretary. John A. Robinson, Syracuse, Treasurer.

Copies of the reports of the committees, and the annual address, delivered by Samuel B. Woolworth, principal of Cortland Academy, in pamphlet, are attached hereto.

GEO. GEDDES, *President.*

Onondaga county, December, 31st, 1846.

Horticulture.

The committee on Horticulture respectfully report: that the exhibition of fruits was superior to any ever before witnessed in our county. Flora and Pomona graciously smiled on yesterday's festival, and their presence was fully attested by blooming flowers, fruitful vines, golden fruits and other valuable treasures, the products of the luxuriant soil of Onondaga, and equal to the fabled fruits of the garden of Hesperides. The adaptation of our soil and climate to the production of nearly all the varieties of fruit common to our latitude, and the increased interest manifested of late in this department, must soon place Onondaga among the first fruit growing counties of the state. The propagation and cultivation of fruit, which so easily transforms the bitter crab into the golden pippin, the choke pear into the melting Bergamotte, the insipid peach into a delicious fruit, should no longer be neglected by any of our intelligent farmers, but this source both of pleasure and profit, should receive that attention its importance demands.

The committee noticed a pyramid of fine fruit, (twenty varieties of apples) prepared by James Geddes, of Camillus; for the taste and arrangement displayed, the young gentleman is entitled to much credit.

D. C. LeRoy, Wm. Clark, Harvey Loomis, committee.

Report of the committee on Plowing.

The committee on plowing would respectfully report:

That fourteen teams entered the field for competition in plowing;

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all of which did the work in a first rate and workman-like manner. Your committee have seen many plowing matches, both State and county, but they have never before seen one where the work was so well performed as it was at this. The competition was very close, and with three exceptions, it was difficult to decide which was entitled to preference.

Among the plowers we noticed a lad of thirteen years, a son of J. M. Cook, Esq., of Skaneateles, who did extremely well for one of his age. If he will continue to practice with due care, he will probably be able to successfully compete with any plowman in the county, long before he arrives at the years of manhood.

As all cultivators of the soil are much interested in the subject of plowing, your committee would, with due deference to the opinions of others, take this opportunity to make a few remarks on that subject.

The object of plowing is to prepare the ground for the reception of seeds; and the prospect of a crop depends much on the manner in which the plowing is performed. Formerly, less attention was paid to this than its importance deserved, but the interest which we see manifested at our annual plowing matches, by the attendance of large numbers of our citizens, not even excepting the fair of our highly favored and prosperous county, shows that public attention has become alive to the subject; and the straight and well turned furrows show that in this, as all other things, whatever the American people wish to improve, is sure to advance with rapid strides towards perfection. This is emphatically an age of improvement, and "go ahead" is the universal motto; and while we cause the plow to "go ahead," let us also strive to do the work in a skilful, scientific, and efficient manner. To do this, the plow should be of good pattern, in good order, and drawn by a good, well trained team. The furrow must be straight, and of uniform width and depth. Whether the furrow slice should be turned flat, or left at an angle with a lap, depends on the soil. If the soil is porous and sandy, flat furrows are probably best, as they leave the earth more compact and with less surface exposed. But if the soil is in any considerable degree stiff and retentive of water, the angle or lap furrow is best, because it exposes a greater amount of surface to the action of the atmosphere, and particularly because each furrow furnishes for the season an under drain, into which the superabundant water finds its way, thus relieving the plants from the injurious effects caused by too much wet weather.

The depth of the furrow is a very important part in the art of plowing. The soil will become friable and fertile to the depth of the plowing; consequently, if the plowing is deep, the roots have a much greater quantity of fertile earth to support them, and aid in maturing the crop. But this is not the only beneficial effect of deep plowing. The roots of the plants extend deeper, and are therefore not so soon affected by drouth. Also a large quantity of earth being made mellow, it much more speedily absorbs moisture,

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and thus relieves the crop from the effects of too much wet. To illustrate this, take a sponge of given dimensions and fully saturate it with water; then take a sponge of double those dimensions and the same quantity of water will not make it very wet.

The object of summer fallowing land is to thoroughly subdue and clean it of noxious plants and weeds. This process, though very expensive, is sometimes needed. Seldom if ever will it need repeating, if it is thoroughly done, and due care is used to keep the land clean when once made so. But how few comparatively, clean their land by summer fallowing. Many lose the use of their land nearly an entire season, two or three plowings, and yet for the lack of a sufficient number of plowings, or from not performing them in a proper manner, or at a proper time, the land is not made clean, the weeds are not destroyed. We have seen them ripen their seeds between the plowings. It is a universal law of nature, that all plants and vegetables must in their proper season grow, or they will surely die. This rule we wish to impress upon the mind of every farmer, for thus nature teaches us how to destroy noxious plants and weeds of all kinds. The leaves are as necessary in vegetables as the lungs are in animal life. If the leaves are not suffered to grow the roots must die. In order to accomplish this by summer fallowing, we must plow or harrow the earth so that nothing can grow for one entire season. If this is thoroughly done, the earth is made clean, is well fitted for a crop, and this expensive process will not soon need repeating, though it always does if but imperfectly performed.

To Guy Cook we award a diploma, for obtaining a premium on plowing at the age of thirteen years.

E. Marks, A. Hall, H. Avery, H. Reed, D. Cossit, committee.

Syracuse, October 2, 1846.

Report on Farms.

The committee to whom was assigned the duty of visiting the farms of this county, report, that they have been called to visit but four, and have found them all under a good system of culture as it respects improvement, productiveness, and general management.

Your committee entered upon the duties assigned to them, on the 15th of July, and met together at Mount Pleasant farm, owned and occupied by Squire M. Brown, in the town of Elbridge, containing 210 acres, of which 70 acres are wood land, leaving 140 acres for cultivation, the soil a rich sandy loam. *Timber*, oak, chestnut, maple, beach, white ash, with hickory, basswood, hemlock, and elm.

Your committee beg leave to present the following statement from Mr. Brown of his farm operations, productions, stock, &c.:—

Wheat, 30 acres, averaging per acre, about 17 bushels, quality good; 20 acres very much winter or spring killed, and all considerably injured by the Hessian fly or insect, no weevil discovered.

Twenty-two acres were summer fallow, plowed in May and June;

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10 acres pasture, and the other 10 were barley and oat stubble; fallow all plowed three times previous to seeding.

The 10 acres of stubble, 1st plowing seven inches deep; 2d, eight inches; 3d, five inches, three or four days previous to seeding, top-dressed with three to five bushels common Onondaga salt per acre. Seed sown 5th and 6th September, one and three quarters bushels per acre, of the white flint variety, and harrowed in; rolled with a medium-sized roller in April; average on this field a fraction over 26 bushels per acre, quality very fine.

The fallow from pasture, 1st plowing, four inches deep; 2d, six; 3d, five; no top dressing; sown August 28th, one and a half bushels seed per acre, and harrowed in. Average product about 16 bushels per acre, medium quality.

The 10 acres barley stubble, plowed once from five to seven inches deep, dragged lengthwise the furrows, and sown the 17th day of September, one bushel and three quarters of seed per acre, variety, Canada flint; nearly a failure; produced about eight bushels per acre, quality fair.

Corn, 14 acres green sward, plowed once, seven inches deep; previous to plowing, spread about thirty farm wagon loads of long manure from barn yard per acre. *Salt*.—Three weeks before plowing top-dressed two acres with a barrel of common salt per acre, rolled and harrowed; marked three and a half feet apart each way, planted on the 10th and 11th of May; variety, eight-rowed white flint and Onondaga yellow; top-dressed a part with ashes, a part with ashes and salt, a part with plaster alone, a part with ashes, plaster and salt—as much ashes as plaster and salt. This last compound about six bushels per acre more than either of the above dressings. The field was cultivated after planting, principally by two boys about 13 years old, with a four years old colt. A common corn cultivator was used, making no hill about the corn, keeping the surface as flat as possible; the crop where the salt was sown broad cast is quite superior to any other part of the field.

Mr. Brown remarks: "I have experimented with salt until I have become convinced that its application to my soils is of great utility, and a source of profit. So well am I satisfied with the results of my experiments, that I make use of at least 300 bushels on my wheat fallows this fall. One of the best results from its use, is the prevention of rust on wheat; and in no case have I failed to receive benefit from its use."

Meadows, 23 acres, clover and timothy, top dressed with two bushels plaster per acre, product 48 tons choice hay.

Barley 14 acres (preceding crop corn) plowed once, sown 20th April, two bushels seed per acre, two rowed variety, top dressed a part of the field with salt at the rate of three bushels per acre, crop materially benefitted, average crop about 40 bushels per acre, quality first rate.

Pasture, 36 acres, mostly clover, dressed with about two bushels plaster per acre.

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Stock on farm: 6 horses, 10 oxen and steers, 21 cows and heifers, 9 calves, 21 hogs, 130 sheep.

All fed on the feed of the farm grass, except 5 of the horses, which have been kept in stable, and fed on cut feed, have performed unusually well.

Stock consists of pure blood Devon, grade Durham; and native.

Sheep, cross of Saxony, Leicester, and South Downs.

Remainder of the farm in fallow, potatoes, gardens, building grounds, and yard, 4 acres of road, &c.

Buildings all nearly new, and constructed in such a manner as to secure convenience, utility, and permanency.

Drains, about 200 rods of under drain made of stone, answering the design; about 60 rods of open ditch, something troublesome to keep open, but answering a good purpose.

Fences, about 600 rods of post and board—cedar posts and hemlock boards; 200 rods wall, no rail fence of consequence, except to fence in timber land.

In viewing this farm your committee were forcibly struck that a thorough system of doing up things in a scientific way, and at the proper time, has been, and is pursued, as the whole demonstrates that industry and skill are combined, and are the agents which have accomplished so much.

The next farm visited by your committee is owned and occupied by James L. Randall, situated in the town of Lysander, about two miles east of the pleasant and thriving village of Baldwinsville, and containing about 65 acres. This farm has been occupied by its present proprietor about 11 years, is in an excellent state of cultivation, divided into lots of suitable size, and mostly fenced with rails, the soil first rate, and tilled in a thorough manner after the most approved method. The crops of grass, barley, and spring wheat are abundant, and the corn crop appeared very promising. His land is admirably adapted to every department of farming, whether for pasturage, meadow or plowing; his buildings well arranged, and all have a very creditable appearance. When at Mr. Randall's your committee availed themselves of the opportunity of examining his flock of pure blood Spanish Merino sheep, recently selected from the well known flock of John J. Rich, Esq., of Shoreham, Vermont. We would recommend to such as are desirous of improving their flocks of sheep, by crossing with the Merino, that they will find with Mr. Randall, pure Spanish blood Merino bucks, which he offers for sale on reasonable terms.

Your committee next proceeded to visit the farm of Henry Avery, situated in the town of Lafayette, about two miles south of Jamesville, in the Butternut Creek Valley. At night we found ourselves under his hospitable roof. In the morning we proceeded to examine his farm, containing 137 acres, lying on the west side of said creek, and facing the morning sun. Mr. Avery has been on the farm 15 years, during which time he has erected a substantial and convenient dwelling house, barns, sheds, and other farmbuild-

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ings and outhouses, all of the first order. About 500 rods of stone wall, beside numerous other improvements; about 40 acres of the farm is a sandy loam, or alluvial soil, and 25 gravelly, and in some spots clay. The west part and remainder is strictly of the limestone character. There were growing on the farm 40 acres of wheat, which were unusually good for that season; 15 acres barley, 1 oats, 1 potatoes, 15 corn, very promising; 25 pasture, and 15 acres of wood land. His fields are in a high state of cultivation, free from noxious weeds, and each one supplied with water. Your committee were highly pleased to see the healthy condition of almost every thing about the farm, which is a sure index that thrift and plenty abound.

Mr. Avery thinks the Canada flint wheat is one of the best varieties where the land is thoroughly cultivated; has sowed it for six years past, the average has been equal to 25 bushels to the acre.

Our next and last visit was to examine the farm of William Plumb, situated on the west line of the town of Salina, containing 146 acres, 26 in wood, the remainder under cultivation.

The soil is composed of lime, gypsum, and shale, and in some places clay is intermixed, being located on the first strata below the lime rock formation. This farm has been owned and occupied by Mr. Plumb about 16 years. When he commenced, his means for improving were rather limited, and a vast amount of labor was necessary to bring it forward, and make it productive.

Your committee were here forcibly reminded of the old adage, "where there is a will there is a way." This farm now produces annually 3,000 bushels of grain, about equal parts of wheat, corn, barley and oats, 20 bushels of clover seed, vegetables for family and stock. The stock consists of 8 horses in the whole (five of which are used for farm labor), 12 head of cattle, 60 to 100 sheep, and 20 swine, besides poultry, &c., all of which are well kept and in a thrifty condition. The past winter sold $100 worth of fodder. The farm is divided into lots of convenient size, varying from 5 to 10 acres, and fenced with 300 rods post and boards, and 600 rods with permanent stone wall, a lane passing through the centre of the farm makes the whole easy of access.

Thirty acres are seeded annually with clover, which after laying one season, is plowed under in fallow. Barn yard manure, together with house ashes and plaster, the latter on almost all crops, are used for fertilizers. The rotation system in cropping is pursued.

Every thing on this farm bore evidence that the occupant performed his duty, and we learned many things from Mr. Plumb which gave us a favorable impression of his system of farming.

To detain you any longer, by going into detail, would perhaps be trespassing on your time and patience; to give a definite description of the several farms visited by your committee, with their improvements, &c., would swell this report to an extent that might be unprofitable.

A great degree of delicacy has been felt in awarding the premi-

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um where all are so justly entitled to praise and commendation, perhaps some other committee might have arrived at different conclusions.

Your committee award the first premium on farms in the county to Squire M. Brown; the second to William Plumb; third to Henry Avery, and recommend a diploma to James L. Randall.

CURTIS MOSES, *Chairman.*

Farmers' Conferences.

In Onondaga county, meetings have been held during the past year, by the farmers, at which subjects important to the cause of agriculture have been discussed, and the results so far as we have been enabled to ascertain, have been in the highest degree satisfactory. The executive committee would recommend this course to the friends of agriculture in every county. By meetings of this kind, the experience of practical men, with facts, illustrated by their experience will be obtained; and these are what we need, and of more importance than any thing else in the present state of agriculture in this State. We have obtained the proceedings of these conferences, on two occasions, when the following subjects were discussed, viz: the "*preparation of manures,*" "*Sheep and sheep husbandry.*" These are important subjects, and we give the discussions at these meetings not only to show the manner of conducting them, but also for the purpose of spreading before the farmers of the State, the valuable facts and suggestions which are contained in the proceedings.

Baldwinsville, December 11, 1845.

The meeting was called to order by Mr. George Geddes, the Vice President of the county society. Mr. Burnet said the subject for discussion at the present meeting, was the preparation of manures.

Mr. Geddes said, he prepared his manures in this way: his barns are on a side hill and have cellars under them. The wash of the yard is received in a basin formed by an embankment, and is constantly supplied with water from the watering trough. It is not in the middle of his yard, but in one corner, out of the way, and is well filled with straw, weeds, &c. He stables all his cattle at night; his stables are laid with a tight double floor, and littered with straw sufficient to absorb all the urine. He has the manure of the stables as fast as it accumulates, drawn out to the middle of his yard, and piled. Formerly he threw the manure from the stables into the yard and piled it in the spring; now he moves it but once. He makes the pile as high as a man can conveniently pitch, and sixty feet long by twenty wide. On the top of the heap he puts a covering of plaster, perhaps a ton in all. He uses plaster in his stables also. There is no smell from his stables, none from his manure heap.

During the day he allows his cattle to run in his barn yard, and

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feed from a stack of straw, which is built on a rack made of rafters two feet apart, resembling somewhat the frame of a roof inverted, or the skeleton of a canal boat. As fast as the cattle consume the straw, the stack settles, so that they have straw within their reach as long as any remains.

All feed more valuable than straw, he feeds from the mangers in the stable. His sheep are kept in a separate yard and provided with a warm shelter. He always feeds them under cover, feeds them straw as well as hay. It has been ascertained that sheep will yield more wool when fed straw and hay, than hay alone. Mr. Geddes would not recommend any elaborate or expensive mode of preparing manure. He thought our soil too fertile as yet, to warrant any great expenditure for manures. Dr. Emmons had pronounced it the very best in the State, so far as he was then able to judge. He was now analyzing it, expecting to find it almost as good as soil can be made. Mr. Geddes' experience had convinced him that the value of barn yard manure and compost had been overrated by some agricultural writers. He believed it worth but little more than the expense of piling it and drawing it on to his fields. He thought clover and plaster equally valuable, and a great deal cheaper, still he had always fed all his straw and hay and saved all the manure. He would advise farmers to do the same; but he would not have them go to great expense to make compost heaps as some writers recommend. The fields on the rear of his farm which he manures with clover and plaster exclusively, yield as well as those near his barn which get all the manure from his yard. He had tried an experiment to test the value of manure for corn ground. He found that ground which had no manure, yielded 60 bushels per acre. That which had coarse manure at the rate of 150 loads to the acre, plowed under, yielded 70 bushels per acre. That which had 150 loads per acre of coarse manure, plowed under, and 25 loads per acre of short manure as a top dressing, yielded 80 bushels per acre. The corn without manure, cost fifteen cents per bushel. That which had coarse manure, cost forty-two cents per bushel. That which had both coarse and short manure, cost 45¼ cents per bushel. The next year the land without manure, yielded 65 bushels per acre, 5 more than the first year. That which had coarse manure alone, yielded 71 bushels, 1 bushel more than the first year. That which had both coarse and short manure, yielded 72 bushels, or 8 less than the first year; but still 7 bushels more than the land which had no manure. So that in the two years he received from his manured land 42 bushels of corn per acre more than from that which had no manure. Those 42 bushels of corn cost him the use of 325 loads of manure for two years, or rather he received not quite 6¼ cents per load for the use of his manure for two years. What effect the manure may have upon subsequent crops, he cannot say.

On all this ground Mr. G. had sowed plaster. He has sowed it every year on all parts of his farm. Some of his land had been

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cultivated as long as any in the county, and had been plastered for nearly fifty years. His father was one of the first who ever used plaster as a manure. Mr. G. thinks there is no foundation for the opinion that "plaster makes rich fathers but poor sons." He thinks those portions of his farm that have been plastered longest and most, now yielded the heaviest crops.

Mr. Bowman had never taken pains to prepare his manures. He thought it would not warrant the expense. He draws it from his yard as he wants it. He did not believe it would pay even to pile and sprinkle it with plaster. Mr. Plumb prepares his manure by drawing it up in winrows in his barn yard and covering it with plaster. He thinks the plaser rots it, has noticed that those portions of the heap which had most plaster, were the most thoroughly rotted. Mr. P. cleans his barn yard three times a year. He applies coarse manure to corn and rotted manure for his summer fallow. He thinks his crop of corn nearly doubled by the use of manure.

Mr. Dolbar thinks manure should not be fermented in the yard. He gets it out as fresh as he can, prefers to have it decompose on his field, because he believes that most of the food of plants is derived from the air through their leaves.

Mr. Geddes said, this theory is disputed by eminent chemists, and he was inclined to reject it. He had tested it partially, by sprinkling carbonate of ammonia under some drooping house-plants, expecting if this theory was true, to see them revive, but they continue to droop and will die.

Mr. Truesdell here asked some gentleman what he thought of plaster as a manure? Mr. T. had never derived any benefit from it. He had sowed it on wheat at the rate of four bushels per acre, on both sand and gravelly soils without effect. He had tried it upon corn too, in this way. On a part of a certain field he used plaster, on another part ashes, on another plaster and ashes mixed, and on the remainder nothing; he could see no difference in the crops on the different portions of the field.

Mr. Bowman had seen wonderful effects from plaster on a small part of a neighbor's field. His neighbor had broken a barrel of plaster by accident on one of his fields, which he scattered with a shovel over a spot one or two rods square. This spot could be seen after the wheat was up, as far as a person could see the field, the grain there was so much more luxuriant and green. The same superiority marked this spot in the crops which succeeded for years.

Mr. Dow had never derived any benefit from plaster; he had a gravelly soil. Mr. Truesdell here asked Mr. Brown if he thought unleached ashes were good for meadows; Mr Bowman thought they were excellent. Mr. Emerick asked if ashes were better for meadows than plaster; Mr. B. could not say, Mr. Geddes thought they should be mixed; he thought ashes as good as plaster. Some gentleman asked the relative value of leached and unleached ashes. Mr. Geddes had heard Dr. Lee say that he thought only twelve per cent of the

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potash was taken from ashes by leaching; and he (Mr. G.) knew that the farmers of Long Island had given the chandlers of Troy about as much for their leached ashes, as the chandlers gave for them before they were leached.

Mr. Dow considered leached ashes as a valuable manure; Mr. Bigelow thought them especially valuable for bottom lands, or such as are composed of a deep black mould.

Mr. Brown had used ashes in various ways on corn. In one field, he put ashes on the first twelve rows; on the next twelve, he put plaster; on the third twelve he put nothing; on the fourth twelve, he put ashes, plaster, and salt; in the proportions of ½ ashes, ¼ plaster, and ¼ salt. Those which had ashes, plaster and salt, yielded five bushels to the acre more than any of the others. Those which had ashes alone, yielded at the rate of two and a half bushels more per acre than those which had nothing. Those which had plaster alone, were about the same as those which had nothing. He did not consider this experiment entirely accurate, still it was near the truth.

Mr. Bigelow here asked how he could kill bogs; he had cut them off with a hay knife and burned them, but they were still growing. Mr. Brown advised him to apply unslacked lime. Some other gentlemen recommended plaster.

The chairman, Mr. Wells, here asked if any gentleman had experience of the efficacy of charcoal as a manure. Mr. Plumb had a spot on his farm where a coal pit was once burned; he had noticed a very decided superiority in the crops on that spot for years. Mr. Wells had a similar place on his farm, and had noticed for twenty years a more luxuriant growth on that place than on any other portion of the field.

Mr. J. B. Burnet here introduced the subject of salt as a manure and said that his father had used it in a small garden at the rate of 30 bushels per acre. On the same ground and at the same time he put lime partially slacked at the rate of 150 bushels per acre. This large quantity of salt was put on by mistake of the gardener, and fears were entertained that the soil was ruined. But to his surprise, the seeds planted there the next spring grew in due time and the crop of vegetables was as good as that of any of his neighbors, as good as any crop he had grown since then. The soil was taken from a spot where manure had been pited for two or three years in succession, and was very rich and full of angle worms. There were no worms nor weeds there for two or three years after. The salt and lime were applied in the fall.

Mr. Geddes was glad the subject had been introduced as he had been anxious to know how much salt might be used without injury.

Mr. Brown said that Mr. Johnston in his Agricultural Chemistry has stated that salt might be used with benefit up to 40 bushels per acre; beyond that it was more and more injurious until we reached eighty bushels per acre, which would destroy vegetation entirely.

Mr. Geddes had no doubt the time would soon come when salt

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would be used for manure as extensively as plaster is now. He thought the demand for salt would increase enormously in consequence.

Mr. Ellis said, the subject of sheep and sheep husbandry was discussed at the last conference, and he inferred from the report that the subject was to be renewed at this meeting.

The chairman, Judge Moseley, called upon Mr. Ellis for his views and practice.

Mr. Ellis said he would by no means offer his system as a standard, but he had some experience and would cheerfully submit it. He keeps from four to five hundred sheep, reserving the increase of each year, and disposing of the older and inferior animals; his flock was originally part Merino and part Saxon sheep; he had improved it with Saxon up to this time, a period of about 12 years. They are kept during the winter on corn stalks, straw and hay; not more than one-half of their feed is hay. Where ten tons of hay would keep a given number of sheep, he would prefer seven tons of the hay and the remainder corn stalks and straw. His flocks are so divided, that those of equal size are kept together, and the ewes and wethers by themselves. In feeding sheep, care should be taken not to get hay seed or wheat beards in their wool, as but a small quantity of them will render the wool unmerchantable. He generally tags his sheep in the spring, before they leave the yard; he thinks this not only a saving of wool, but a positive benefit to the sheep. The tags when left on the sheep, are apt to contract moisture and thus induce diseases; he gets two shillings per pound for the tag wool; he washes his sheep in a vat on his own farm; shears them in from 6 to 10 days after washing, and immediately after shearing, dips those that have ticks, in a decoction of tobacco, mixed with a little turpentine; he has sometimes dipped every sheep, but this is not generally necessary; for if left to run a few days after shearing, the ticks will all leave the old sheep and take to the lambs, so that only the lambs will need dipping. He would repeat his injunction to keep the wool clean; the price of wool depends much upon its cleanliness; hay seed and beards depreciate it seriously.

Mr. E. removes the bucks from the flock immediately after shearing; thinks it unsafe to allow them to run longer. He turns them in again the first or second week of December. When he assorts his flock in the fall for folding, he generally trims off the tags again, to prevent the sheep from getting wet; if they get wet in winter they are liable to scour.

Mr. E. has bred in and in for 12 years, with great success; his last year's produce is as good as any he has ever raised; he has recently changed his buck however.

Mr. E. observed that his remarks would not all apply to coarse wool sheep; he would have gentlemen bear in mind, that he had been talking of Merino and Saxon sheep. He thought it important to select sheep with a strong constitution, as no sheep of a feeble constitution could yield a heavy fleece.

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Mr. Geddes asked if Mr. E. could get a hevy fleece without getting a fine one. Mr. E. thought his finest wooled sheep yielded the heaviest fleeces in proportion to their weight of carcass.

He was sure that the fine wooled sheep require a less amount of food than the coarse wooled.

Mr. Geddes said it had been proved by German shepherds, that all sheep eat in proportion to their weight, other things being equal.

Mr. E. thought that a sheep with a thin light fleece, could not be wintered on as small amount of feed, as one with a heavy fleece; because the one with a heavy fleece would be protected better from the cold.

He thinks, however, that all sheep should be well kept, if a good fleece is desired. They should not only be well fed, but well sheltered.

Mr. Dowd asked if high keeping made sheep yield coarser wool. Mr. E. thought not; he theught high keeping improved the style and general appearance of wool. The wool from a sheep in poor condition is dry and cottony; that from sheep well fed is moist and silky, and is more profitable for the manufacturer.

Judge Strong asked Mr. E. if he should come in possession of a flock of sheep this winter, which he intended to breed from—whether he would keep them so as to get the heaviest fleece possible from them next spring.

Mr. E. would pursue the course this winter which he intended to pursue in future years. Judge S. asked if the keeping the sheep high for the first year, would not injure the sheep for breeding afterwards. Mr. E. thought not any further than the change of habit would affect them.

Mr. Geddes handed Mr. E. a sample of wool, and asked his opinion of it. Mr. G. said it was grown in Chenango county, and was handed to him by a professed assorter, who considered it a standard for fine wool.

Mr. E. noticed some hairs and a good deal of animal matter in it; thought we had several flocks in this county as good, and a few a shade better. He would not be willing to adopt it as a standard for this county.

Mr. Marks being called upon said, he keeps from 2 to 400 sheep; hires a part of them out, for a pound of wool per head per annum; has been breeding Merino sheep for a few years, and has been endeavoring to combine fine wool with heavy fleeces; thinks weight of fleece rather more important than fineness of texture. His mode of keeping is similar to that of Mr. Ellis, except that he feeds a little grain to his ewes and to his lambs; he prefers beans to any grain he has ever used. Next to beans he prefers corn. He thinks that to feed a half a gill of corn per day to each sheep is good economy; he grinds corn with the cob in order to save the cob; thinks sheep do as well, generally on the whole grain as on ground grain; he has not fed peas, but thinks pea vines cut and cured as hay, an excellent fodder for sheep.

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Mr. Britton asked Mr. Marks if he should be so situated that he could feed grain but a part of the winter, whether he would feed it in the fall or the spring. Mr. M. would feed his lambs and wethers in the fall, and his bearing ewes in the spring; does not think it endangers the loss of their lambs to feed ewes grain in the spring, unless they are over fed. A half gill per head each day is enough.

Mr. Geddes asked Mr. Marks, whether the difficulty of feeding sheep *equally*, was not the only objection of folding them in large flocks. Mr. M. thought this the chief objection to large flocks.

Some other gentlemen thought that when a great many sheep are kept together, they inhale each others' breath and thus contract diseases.

Mr. Marks thought that not more than a hundred should be folded together. Mr. Ellis had kept over three hundred in a flock for two winters, and never knew sheep to winter better. They were fed in a yard so small that a person could not pass through the flock while they were feeding; when under the shed they were equally close. Judge Strong remarked that sheep feed more unequally than any other animals, therefore they should be kept in small flocks. Mr. Marks recommended the dipping of sheep in a decoction of tobacco; he thought it would cure and prevent the scab, as well as kill ticks. Mr. Geddes asked how ticks could be removed from sheep at this season of the year. Mr. Marks thought they might be killed by applying Scotch snuff.

Mr. Randall, of Lysander, had pursued substantially the same system of sheep husbandry described by Mr. Ellis and Mr. Marks. He feeds his sheep corn all winter, at the rate of a half bushel to 100 sheep per day; he feeds them what hay they will eat up clean; feeds it in racks; keeps from one to two hundred, chiefly Merinos, with a few Leicesters, South Downs, Saxons and Natives. Could not give accurately their average weight of fleece; thought the Merinos yielded the heaviest fleeces; Saxons, Leicesters, South Downs and Natives about equal. Thinks his largest Merino and his largest Leicester about the same size. His Merino wool was the best, finer and with less yolk than the Saxon. His Saxons were from H. D. Grove's flock, some ten years ago, but were not quite thorough bred.

Mr. Geddes remarked that Mr. Randall's Merinos, were from noted flocks in Vermont, and were among the best in the county.

Mr. J. B. Burnet asked Mr. Randall if he bred the Merino, Saxon, Leicester, South Down, and Native sheep together promiscously. He said he used the same buck on all; a Merino buck.

Mr. John Strong has a small flock of sheep which are a cross of the Leicester upon the Native stock. They are about three quarters Leicester. He has between forty and fifty of them. They yielded 4¼ pounds of wool per head, which he sold for twenty-nine cents per pound. He sold a lot this fall which he had fed about six weeks, for $4 per head.

Mr. Marks sheared a year ago last spring 100 merino sheep, one

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third of which were yearlings, and only four or five wethers among them; they yielded 4 lbs. 6 oz. per head. Last spring his flock averaged 1 lbs. 3 oz. per head; he sold his wool last year for forty cents per pound, this year he sold for 32 cents; he sold a lot of fat wethers in June for $2 per head. Mr. Strong sold his wool last year for 32 cents per pound. Mr. Burnet asked Mr. Geddes if he thought sheep could be bred with fine fleeces, and at the same time be good for mutton; Mr. Geddes said he was a young breeder and should not be taken as authority concerning sheep. It was his opinion, however, that fine wool and good mutton could not be combined; he thought every farmer who proposes to breed sheep, should first determine what he wants. If fine mutton, he should breed Leicesters or South Downs, or some of the coarser wooled sheep; but if he wants to breed sheep for wool, he should get the Paular Merinos, or Saxons. He had made up his mind after studying the question two or three years, that he wanted to breed sheep for wool, and he had purchased some of the best Paular Merinos he could procure; thinks the best sheep for wool is one that will produce the most wool of a certain quality in proportion to its weight of carcass; he never saw a fleece, heavy in proportion to the weight of the carcass, that was not fine wool. Mr. Kirby had weighed a Merino and a South Down, between which there was ten pounds difference in weight of carcass; the South Down yielded two pounds less wool than the Merino, though ten pounds heavier in carcass. Mr. Geddes said that the rule established by German shepherds, that a sheep eats in proportion to its weight, applied to the amount of food requisite to keep them in a thriving condition; not to fat them, some sheep convert their food to fat, others to wool. Mr. Ellis asked if any gentleman had ascertained the exact quantity of hay a sheep would eat per day; Mr. E. had often weighed the hay thrown to his sheep, and had never been able to get them to eat more than 2½ pounds each per day. Mr. Marks asked if any gentleman had ever kept sheep on straw and grain exclusively; Mr. M. had proposed to dispense with meadows on grain farms; he could keep horses and cattle cheaper than to feed them hay; if he could do the same with sheep he would have no meadow on his farm. Mr. Woodford had a small flock of sheep which he has kept for years without a lock of hay; he feeds wheat, barley and oat straw, with a few corn stalks; his sheep have thrived well. The chairman said he had kept a small flock of wethers, this winter, exclusively on straw threshed with a flail, and they were doing better than they did in former years, when he fed them on hay or corn stalks; he suggested to those who keep sheep and cattle on straw, that it would probably be better for them to thrash with a flail. Mr. Ellis has threshed with a flail for some years, and thinks it the better policy; he is confident the straw is better to feed for being threshed with a flail; it is pounded and softened by the flail, so that the sheep eat portions of it they would not touch when threshed by a machine. When threshed with a flail the leaves are left on, and some of the

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chaff. Mr. E. thought he got more grain into the half-bushel when threshed with the flail than when threshed with a machine; and he threshed cheaper. It cost him twelve cents per bushel to thresh with a machine, and but nine to thresh with a flail. Mr. Geddes said he could thresh with a machine for six cents a bushel. Mr. Plumb had his threshed with a machine for eight cents per bushel. Mr. Geddes would advise all to thresh with a flail if the winter market was as good as the fall market; he thinks every man who threshes with a machine should own one.

Mr. Ellis here read a letter in relation to the European market for American wool, from wool dealers in New-York, who are agents for extensive dealers in London. From this letter it appeared that American wool is not properly cleansed for the English market. Mr. Ellis proposed that some half dozen wool growers in our county should put up their wool according to the English rules and send it to those agents in New-York for shipment to London; the agents in New-York would advance 75 per cent of the price of the same kind of wool in the London market.

The chairman addressed the meeting for a few minutes, and expressed his approval of the Farmers' Conferences; he thought they were calculated to improve the system of husbandry in the county, and to elevate the character and condition of our farmers; he had become a farmer himself and took great interest in every effort made to advance the Agricultural profession.

ONTARIO COUNTY.

The Annual Fair and Show of the Agricultural Society of Ontario county, was held at Canandaigua on the 13th and 14th of October. The first day, set apart for the exhibition of live stock, was exceedingly unfavorable in consequence of a heavy rain, which continued during the whole day. The exhibition was respectable, but a much less number of animals were present than usual, and the exhibition on account of the unfavorable state of the weather, appeared to great disadvantage. There was a good show of horses, and there were several fine animals, bulls, cows, and young cattle on the ground. Among the working oxen exhibited, were some remarkably fine cattle. The swine exhibited, were in most respects superior to those at former shows. The sheep were not of unusual excellence.

The second day was appropiated to the exhibition of domestic manufactures, mechanic arts, fruits, flowers, &c., and as the day was unusually fine, the number of persons in attendance was large. The specimens of domestic manufactures and needlework were numerous, highly creditable to the taste and skill of the ladies; and the exhibitions in the other departments were highly respectable.

The society met at the court-house in the afternoon, and were ad-

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dressed by J. B. Nott, Esq. Corresponding Secretary of the State Society.

He selected a useful and appropriate subject, and presented it in a clear light. His object was to show what the farmers of Ontario could do, and must do to keep up the richness and fertility of their soil. It was not general declamation, but the deductions of science and conclusions drawn from extensive observations, on which he relied. On such a subject, no one could speak better or more instructively than Mr. Nott, uniting as he does a practical knowledge of farming, with great research in chemical science. The importance of the truths discussed, must be seen by all who reflect upon the relations in which we stand to the Far West, where the soil is yet in its virgin state, and possesses a richness and productiveness greatly superior to ours at the present time. If they can raise forty bushels of wheat upon the same quantity of land, which with us produces only fifteen or twenty, and if we must compete with them in the same markets, it is obvious that the question is a vital one; what can the farmers do in this region, to bring their land into a more productive state. If the soil is exhausted, how can they, consistently with a wise expenditure of capital, restore it to so fertile a condition, that they shall no longer have inducements to abandon their homes, in pursuit of more abundant crops? This is a great question, a question of deep interest to all who dislike to see an intelligent population migrating to far distant regions in the west.

The concluding part of the address, we hope, will be deeply pondered by the young farmers of this county. And we hope also, that the powerful motives urged by the orator, to induce them to seek for more enlarged and thorough knowledge upon subjects connected with their profession, will not be lost upon our young men, who are destined to the honorable employment of cultivating the soil. How much of this knowledge may be acquired during the long winter evenings that are at hand, and if they will only provide themselves with suitable books?

Mr. Nott having concluded, Joseph Fellows, one of the vice-presidents, offerred a resolution of thanks to him for his eloquent and instructive address, which was passed unanimously.

The society then proceeded to the choice of officers for the ensuing year. The following gentlemen were chosen:

John Greig, President. Elias Cost, Joseph Fellows, Joel S. Hart, Chester Loomis, Jonathan Buell, Hiram Ashley, Vice-Presidents. William W. Gorham, recording secretary. Oliver Phelps, Corresponding Secretary. Nicholas G. Chesebro, Treasurer.

At the winter meeting of the executive town committees of this society, held on Tuesday, the 9th February, the following premiums were awarded:

To Daniel Short, of Richmond, for the best acre of winter wheat, not less than 40 bushels to the acre, the premium of $10, he having raised 59 86-100 bushels per acre on 3 1-60 acres—in the whole 180 bushels.

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To Whiting D. Stanley, of Canandaigua, for the best acre of Indian corn, not less than 75 bushels to the acre, the premium of $7; he having raised 89 62-75 bushels to the acre, (75 lbs. of ears of corn allowed as the weight of a bushel.)

To Calvin Pomeroy, of East Bloomfield, for the best acre of barley, not less than 40 bushels to the acre, the premium of $5.00; he having raised 57 bushels to the acre, on 2 58-100 acres.

To Thomas H. Kellogg, of East Bloomfield, for the 2d best acre of Barley, the premium of $3.00; he having raised 55 1.10 bushels to the acre on 2 acres 11-160 rods.

To Stephen B. Dudley, of East Bloomfield, for the best 3 acres of Barley, the premium of a volume of Transactions of the State Society; he having raised 54½ bushels to the acre on 1 88-100 acres.

To William R. Pettit, of Gorham, for the best ¼ acre of white beans, not less than 25 bushels to the acre, the premium of $3.00; he having raised on 134 rods of land, 34 bushels and 11 quarts.

Geo. W. Bemis was appointed treasurer of the society, to fill the vacancy occasioned by the removal of Nicholas G. Chesebro from the State.

Wheat—Daniel Short's statement.

Statement of a field of wheat containing 3 1-160 acres of land, on which application is made for a premium, to the Ontario County Agricultural Society, by Daniel Short of Richmond.

The undersigned hereby certifies, that he is the owner and occupant of a farm of about 170 acres, situated on the "old Genesee road" so called, about 1¼ miles west from the village of Honeoye, in the town of Richmond, Ontario county; and that in the fall of 1845, he sowed a field on said farm, containing by measurement 3 1-160 acres with wheat, which he harvested the past season; and upon threshing the same, by accurate measurement, found the product to be *one hundred and seventy-eight bushels and three pecks;* that he carefully weighed an average quality of the same wheat by the same measure, and found it to weigh a fraction over sixty pounds to the bushel; from which test, he estimates the crop to be equal to one hundred and eighty bushels by *weight*, or sixty bushels per acre.

The field on which the above crop was grown, was a clover sod, which had lain two years; the two previous crops of grain having been wheat, without manure. The clover was mown for seed the season previous to fallowing. A portion of the field received some manure by foddering a small flock of lambs the winter previous to fallowing. On the remainder, hauled 25 to 30 wagon loads of coarse straw manure from the barnyard, just before breaking up; which was done about the 1st July, 1845, plowing it about three inches in depth, taking care to do the work thoroughly. On the 6th September, cross-plowed same, taking pains to plow about two

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inches deeper than it was broke (the field having been harrowed over previous,) and immediately sowed *seven and a half* bushels of seed wheat, of the "*Soules*" variety, as follows: about one-half of the seed, then harrowed in the same, then the remainder of the seed and a second harrowing, which completed the work.

July 9th, 1846, commenced harvesting the crop by reaping the same, and completed it in two days, the grain having been much beaten down by the storms.

I estimate the cost of said crop as follows:

Breaking up, 1 yoke of oxen 3 days at 12s.....	$4 50	
Harrowing, 1 span horses half day, at 12s.....	75	
Cross-plowing, do 2½ do do	3 75	
Sowing wheat ½ day, at 8s.....	50	
Harrowing in seed, 1 span of horses 1½ days at 10s.	1 88	
7½ bushels seed wheat, at 8s	7 50	
		$18 88
8 days' labor reaping, at 8s.....	8 00	
1½ do hauling and manuring, at 8s	1 50	
Cost of threshing 180 bushels at 5c. per bushel,..	9 00	
		18 50
Total, ...		$37 38

The above land has been in tillage upwards of forty years. The crops grown upon the same were mostly Indian corn and wheat; eight crops of Indian corn have been grown in succession. It has been occasionally seeded with clover, and used as a pasture for swine when not in crops. The timber was originally oak and hickory, with scattering black walnuts; the land having an eastern slope from the top of a ridge. Soil a gravelly loam mixed with clay, a clay sub-soil, considerably stony; good grain land, but not considered very rich land.

Richmond, February 9, 1847.

Barley—S. B. Dudley's statement, East Bloomfield.

The soil is sandy, gravelly clay loam, lighter than most of our oak opening lands, and has a southern exposure.

Cultivation.

The land was a meadow previous to 1845; that season, it bore corn, after having been manured at about 20 wagon loads to the acre; crop damaged by worms. The last spring it was plowed early in April, and sowed the 9th with 6½ bushels of common six rowed barley, soaked over night in brine, and rolled in lime; thoroughly harrowed-in both ways; plastered about 100 lbs. to the acre soon after grain was up; ripe about 1st July; harvested and threshed in July; no manure used this season. Expenses, $18.25. Value of product, $50.

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Beans—W. R. Pettit's statement, Gorham.

The ground, surveyed by Mr. Howe, on which I cultivated beans the season last past, is gravelly loam, with a mixture of clay, had been tilled for many years without manure, and I know not whether it ever had a dressing until last spring, when I gave it about twenty loads per acre, coarse from the yard. It was badly worn; had been in oats the two seasons previous; both crops light; ground plowed once, dragged well, and rolled down; one-fourth of a bushel seed used, of the small white bean; hills 20 inches by three feet apart; cultivated and hoed twice; seed was planted about the 20th of May; crop gathered into small stacks between the 10th and 20th of September; stacks raised from the ground, with a small opening from bottom to top, that air might circulate through; taken to barn, threshed with hand flail, and cleaned in common mill the latter part of October. Quantity of land, 134 rods, yield 34 bushels 11 quarts.

ORANGE COUNTY.

Abstract of the proceedings of the Orange County Agricultural Society, for the year ending October 1, 1846, prepared pursuant to the last clause of the fourth section of the act entitled "An act to promote agriculture," passed May 5, 1841.

As has been usual, heretofore, with this society, the executive committee at an early day prepared their premium list, and caused it to be published in all of the newspapers in the county, together with the rules and regulations of the society, the time of holding the Fair and Cattle Show, and the names of the several members of the committees of judges.

On the first day of the fair, (Sept. 30,) all articles offered for premium were exhibited and were examined by the appropriate committees, and during the day and evening the reports of the committees of judges were prepared and handed in to the president. The competition for most of the premiums offered by the society was spirited, and the show generally was highly creditable to the county.

In agricultural products, the county is evidently making a very rapid advance, especially in respect to the crops of Indian corn, oats, and barley; each of which appear to be cultivated in our *old* county with as much success as upon the virgin soil of the rich bottoms of the "mighty west." Three premiums were awarded for the cultivation of Indian corn: the first to Israel Crawford, of the town of Crawford, *yield* $139\frac{1}{2}\frac{5}{6}$ *bushels per acre;* the second to Hamilton Morrison, of Montgomery, *yield* $108\frac{2}{3}\frac{4}{2}$ *bushels per acre,* and the third to John A. Smith, of Montgomery, *yield* $97\frac{3}{3}\frac{0}{2}$ *bushels per acre.*

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Two premiums were awarded for oats: the first to Hamilton Morrison, of Montgomery, yield 92⅓⅔ bushels per acre; the second to Doct. J. Pattison, of Goshen, yield 49 bushels to the acre.

Two premiums were awarded for barley: the first to Danl. C. Wisner, of Walkill, yield 61⅔⅔ bushels per acre; the second to Doct. J. Pattison, of Goshen, yield 42 bushels ber acre.

The yield of wheat was also very good, amounting to nearly 32 bushels per acre.

The crop of potatoes in the county was very much affected by the disease now so generally prevailing throughout the world, and no field was offered for premium.

The specimens of agricultural products exhibited, elicited the warmest encomiums from the committee of judges.

The show of *animals* and *domestic manufactures* was very good, but did not surpass that of some former years.

The quality of the butter exhibited fully maintained the former high reputation of our county in that product, but the number of samples exhibited was much smaller than at any former exhibition of the society, which may probably be accounted for from the fact, that so large a proportion of our dairymen now send their milk to market, instead of converting it into butter.

On the second day of the fair the plowers' match came off; owing to the excessive dryness of the soil, but five teams were entered, it being deemed by many of our best judges impossible that any team could perform the work within the time allotted to them, seventy-five minutes. The owners of the several teams freely expressed the same opinion themselves, but as a very numerous assemblage of our agriculturists were present they consented to start their teams, to prevent the disappointment which must ensue from an abandonment of the match. The result verified the predictions which were made concerning it, no one team being able to complete its one quarter acre within the time allotted to them. The society, however, being fully satisfied with the performance of the competitors, unanimously voted to award premiums to them.

After the plowing match, the society assembled in the court house, where an address was delivered by the president, and the officers for the ensuing year were elected; the premiums were also then announced and paid.

The following is the list of officers elected for the coming year, viz: William Murray, Jun., of Goshen, President. A Vice President for each town. An Executive Committee. John J. Heard, of Goshen, Treasurer. J. W. Gott, of Goshen, Corresponding Secretary. B. F. Dunning, Recording Secretary.

After which, the society adjourned. All which is respectfully submitted.

FRED. J. BETTS,
President Orange Co. Ag. Society.

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Wheat—George Cooper's statement, Goshen.

In 1844, planted the field in corn; in 1845, raised a crop of oats; in September, about the first of the month, plowed it once, then put on a light dressing of barn-yard manure, and then harrowed it in; then sowed it with the Canada flint, a bearded wheat, at the rate of two bushels to the acre, and harvested from the same acre in 1846, thirty-one bushels and three pecks per acre.

Indian Corn—Israel Crawford's statement, Crawford.

Plowed up two and a half acres of sod land, which had been in grass two years. The soil is loam. About 12 loads of barn yard manure was applied per acre, well mixed with the soil, plowed early in the spring, furrowed out about three feet one way, planted in drills, one kernel every six inches with eight-rowed yellow corn, rolled in plaster, the 15th of May, and before the corn came up, put two bushels of salt on the acre, sprinkled on the drills; and when up, put about four bushels unleached ashes on the drills; plowed and hoed the corn; then sowed, broad cast, 100 lbs. of plaster. The first of July, plowed and hoed again, and cut up the corn 15th of September. One acre was measured off of one side of the lot, of an average quality of the whole. The corn was husked, and measured one hundred and thirty-seven baskets and one-third of a basket; and one basket of ears being shelled and measured, yielded one bushel and one pint a basket; making for the whole acre at the same rate, 139 bushels 15 quarts and one-third of a quart. Expense, $20. Value of product, $78.37.

Indian Corn—Hamilton Morrison's statement.

Early in April last, plowed a field of about nine acres of sward land; the soil a sand and gravelly loam. Had been mowed or pastured 7 years preceding, during which time not a particle of manure of any kind had been applied. Plowed about five inches deep; harrowed well, immediately before planting, and planted on the 15th day of May, in hills about three feet apart each way, four or five grains in a hill. The ground was furrowed with a common corn plow about three inches deep, and the corn covered one inch with a hoe. On the first of June, about a table spoon full of lime and plaster was applied to each hill, and again applied on the 8th. From the 10th to the 20th, it was plowed once each way, five inches deep, and but one furrow between the rows; hoed once, and received no further attention. September 8th, was cut and put up in stooks of 25 hills each. Variety, eight rowed yellow corn. Yield at the rate of 87 bushels per acres. Expense per acre, $7. Value of corn and stalks, $48.50.

Oats H. Morrison's statement, Montgomery.

The acre of oats which I offer for premium was taken from a field of seven acres, all in oats. The previous year, the field was in corn, when three bushels of lime, plaster, and ashes, in equal pro-

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portions, were applied to the acre. No other manure of any kind, then or the present season. The soil was a gravelly loam. The field was plowed early, and on the 23d day of April was sown, broad cast, at the rate of three and a quarter bushels per acre; harrowed twice, and harvested the first of August, and found to yield ninety-two and a half bushels per acre, or six hundred and forty-seven and a half bushels from the whole crop.

Oats—Jason Smith's statement.

The soil on which oats were grown was a loam and vegetable mould. The previous crop was Indian corn; before planting, the ground was highly manured with long or unfermented dung, and turned under. No manure was applied to the oat crop. The ground was plowed but once; the seed sown on the furrows and harrowed in, two and one-fourth bushels to the acre. There were seven acres in the field, and the average yield was eighty-two and a half bushels per acre. The crop was raised in the ordinary method of farming.

Barley—Daniel C. Wisner's statement, Walkill.

Soil gravelly; plowed once; sowed on the 9th day of April, three bushels to the acre. Previous to 1845, the land had been in clover for two years; in 1845, planted to corn, and manured with 30 loads of long manure to the acre. Product, sixty-one bushels and twenty quarts. Expenses, $9.18. Value of product, $36.66.

Butter— Wm. E. Millspaugh's statement, Goshen.

Our dairy is small, consisting of only seven cows, one or two of which are superior native cattle and the rest but common. We always bestow great care in scalding and drying all the vessels to contain the milk and butter. The milk is strained into tubs and pans as soon as taken from the cow. After standing about three days, it is emptied into the churn and a pail full of cold water added, when it is left for one night. In the morning a tea-kettle full of boiling water is added as the churning commences, which lasts about an hour. The butter is then removed from the churn and thoroughly rinsed with cold water. It is then salted to the taste, and left to stand an hour or longer, if the weather is warm. The brine is then worked out with a ladle, and it is packed in close vessels.

Fat Steer.

The steer shown by me, was four years old last spring, and no older. I purchased him a year ago last May. He ran in ordinary pasture with other cattle, *without grain*, until the 15th December last, when he had three quarts meal with hay until first January. From which time until the 4th of May he had four quarts meal per day. His live weight at that time was 1,800 pounds. He was then turned to grass with other cattle, *without grain*, and has been so kept until yesterday evening. His live weight was then 2,085

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pounds, having gained in a little less than five months 285 pounds, or a fraction *less than two pounds per day.*

JOHN J. HEARD.

Goshen, Sept. 30th, 1846.

Orange County Scientific and Practical Agricultural Institute, near Walden.

We give some extracts from a letter received from J. Darrach, principal of this institute, in relation to its prospects, course of study, labor, &c., and would indulge the hope that the efforts making to secure a complete agricultural education, will be successful.

" B. P. JOHNSON, Esq., Sec'y, &c.

" The institute commenced about 20th June, 1846, with eight pupils, from N. Y. city, Brooklyn, Suffolk, Cayuga, Dutchess, Ulster and this county. After about one month, one was expelled for disorderly conduct. At the close of the first session, two were removed by our request. Soon after the commencement of the second session, one was called away to Michigan ; about its middle, another was called home, his father being about to remove to Virginia. A sixth has changed his views, and is about entering a machine shop. Two remain.

" These pupils have daily been at work upon the farms where they resided. In one case, there were three on one farm of 300 acres ; in another, two ; in all the others, one, with their practical instructors ; and these instructors are workers upon their own farms, not only in controlling and managing, but also in operating. The pupils have also attended upon 33 lectures on the theory and practice of agriculture, 12 lectures on vegetable physiology and systematic botany, 10 on zoology and the domestic animals. The lectures averaging 1¾ hours each. In addition, they have read essays and sustained extempore discussions before me, weekly, on agricultural topics. They have studied four books of Euclid, three-fourths of Day's algebra, animal physiology and systematic botany, rhetoric, and had some field exercise in surveying, and in mapping and calculating their surveys.

" Our design is, the promotion of agricultural education, and though the dawn of our second year is dark and forbidding, we think we can perceive evidences of a sun beyond the clouds. One of those evidences is, the fact of your kind note. If we do not reach it by the path we have entered directly, it is opening to me, at least, a path by which I hope to accomplish the object, though that path at present appears longer and more circuitous. We shall sustain this institute for the year, though there is no increase of its pupils, in its practical instructions, while I explore and develop that to which I allude, with the strong hope of returning to carry it through.

" The grand *burden* of my study, has been and is, the thorough education of the farmers' sons, as farmers. What ! shall the millions of American agricultural capital be managed by less intelligent

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minds than those of manufacturing and commercial capital? Shall not the *bone and sinew* of the land *be also its intellect?* The farmers' sons may be, shall be, will be educated.

"With respect, your obedient servant,

"J. DARRACH."

ORLEANS COUNTY.

The sixth Annual Fair of the Orleans County Agricultural Society, was held at the village of Albion, on the 1st and 2d days of October, 1846.

Our agricultural friends came in from every section of the county; and were we to judge of the prosperity of our society by the number present on the occasion, we should say it was cheering.

The exhibition of animals and the domestic arts took place on the first day of the fair. The exhibition of horses was creditable to our county. There were several spans of matched horses which were worthy of the premiums awarded to them. There were also several beautiful single geldings, mares and colts, deserving notice. The exhibition of cattle, sheep and swine, were not as good as those exhibited at some of our Annual Fairs, previously held.

The exhibition of domestic arts was about as usual. The ladies who are always first in a good cause, exhibited several fine specimens of domestic manufactured goods, which never fails to add much to the interest especially of those who seek for good wives.

The specimens of agricultural implements, were more numerous than has been heretofore exhibited. There were several plows presented for examination, some of which were manufactured by Mr. H. Curtiss, of Albion, and were beautiful specimens of mechanical genius, both in point of workmanship and proportion. The plowing match was held on the second day of the fair, notwithstanding, it was a rainy day; there were a large collection of our citizens present. There were ten plowers presented themselves as competitors for the several premiums to be awarded; eight of whom performed the task within the time prescribed. After the plowing match was over, the members of the society met at the academy, where the several committees reported the premiums awarded. The following named persons were then unanimously chosen as officers of the society for the ensuing year:

President, Lyman Bates, of Ridgeway. Vice Presidents, Sylvester W. Kneeland, Barre, Gardner Gould, Carlton, Benjamin Pettengill, Clarendon, Lyman H. Phillips, Gaines, David Jones, Kendall, Jacob Hinds, Murray, Orrin Scoville, Ridgeway, John Freeman, Shelby, Anselmo Tenny, Yates. Lorenzo Burrows, Treasurer. Pierpont Dyer, Recording Secretary. Benjamin L. Bessac, Corresponding Secretary.

The financial condition of the society is as follows:

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Cash on hand over and above the expenditures of last year,		$62 06
1846, cash received of members of the society,		102 50
Cash received from the Comptroller,		75 00
		$239 56
Total amount paid out for premiums,	$177 00	
Paid out for other purposes,	18 87	
		195 87
Amount in the hands of the treasurer, 1st Jan., 1847,		$43 69

LYMAN BATES, *President.*

OSWEGO COUNTY.

The Oswego County Agricultural Society, held its Annual Fair and Show at the village of Fulton, on the 28th and 29th of September. An unusual large number of persons were in attendance, and manifested a good degree of interest in the prosperity of the society.

The exhibition as a whole, was a creditable specimen of the industry and productiveness of the county, though by no means a fair sample of what our agriculturists are capable of doing. The display of matched horses was decidedly good. In this respect the show would compare very favorably with those of the counties around us. In working oxen, the exhibition was fair; in domestic manufactures, the products of the industry and skill of the wives and daughters of Oswego, the show was an eminently excellent one.

Indeed, this department of the exhibition was decidedly in advance of any of the others, in that it showed a greater interest and a more spirited competition among the exhibitors. In this respect, the farmers of Oswego may well take pattern after their skilful wives and busy daughters. In the mechanical department the display was also good.

In milch cattle, sheep and hogs, there was little worthy of note. Some few good cows and now and then a sheep or two, of more than ordinary quality, were visible; but the general display was not worthy of the rich county of Oswego; nor was it a tithe of what our farmers could show in these departments if they felt so disposed. In the hog line, the exhibition was particularly meagre. Many private pens alone, in this county, could have beaten it if they had been on the ground. It is mortifying, that in a county raising so much good pork as Oswego, a better specimen cannot be brought to our fairs.

The plowing match, we are sorry to say, excited little interest, except among those who came to witness it. Three prizes were offered, and but three competitors entered; so of course each took a

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premium. This does not speak well for the spirit of the sturdy plowmen of Oswego; nor does it come up to what their neighbors of the adjoining counties are doing. If no more contestants appear than there are premiums to be awarded, merit will soon cease to be the test of preference. Either the three plowmen entered for the trial were too celebrated for their skill in furrowing the bosom of the old mother earth, or the art of plowing is not held in that estimation among the farmers of this county that it should be, else we should have witnessed a more spirited competition in this department.

The address of Dr. Bowen, was a production of much merit, showing a thorough familiarity with the interesting subject to which it referred, and an excellent literary taste in its composition. It was listened to with much attention, and by a unanimous vote of the society, a copy was solicited for publication.

Officers of the society for 1847: Bradley Higgins, Richland, President. Samuel Foot, Phœnix, John Baker, Parish, Vice Presidents. J. W. Tiffany, Mexico, Treasurer. E. C. Mitchell, Recording Secretary. J. E. Bloomfield, Mexico, Cor. Secretary.

The annexed statements on crops are all that accompany the proceedings.

Corn—G. L. Sherwood's statement, Richland.

The soil on which the corn was planted, is a mixture of sand, loam, and clay, with a clay subsoil. It has been stocked to clover and timothy for the last five years, yielding from one and a half to two tons per acre. During the summer and fall of 1845, drew on and stacked some six tons of hay, and an equal quantity of corn fodder, which was fed out on the land in the spring of 1846. Drew on my long manure, at the rate of sixty two-horse loads per acre, from the 10th to the 15th of May. I turned the sward on five acres to the depth of six inches, and rolled with a heavy roller, pressing the sward tightly together. I then measured off one acre, and drew on 25 loads of fine manure, from the hog and sheep yards, and dragged it in thoroughly. Marked out the ground on the 24th of May, three feet by one and a half feet, and planted half bushel corn of the Redfield variety, soaked for 12 hours in a solution of sal ammoniac and copperas, at the rate of one pound each per bushel, rolled in plaster.

During the five years the land was in meadow, it was twice plastered, at the rate of two bushels per acre, and in the fall of 1844, a top dressing of leached ashes, at the rate of 12 loads per acre.

Hoed twice, thinning to three stalks in a hill; after the first hoeing, sowed broad cast, plaster and ashes, at the rate of four bushels per acre, together with two bushels common salt.

In September, it was cut and stacked; and in October, there was husked from the acre 230 baskets of corn. On the 12th December, shelled and weighed two of the said baskets of corn, weighing 71 pounds nine ounces, which multiplied by 115 gives 8,229 pounds,

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making 146 bushels 53 pounds. Expenses per acre, $39.81. Value of product, $79.47.

White Beans—G. L. Sherwood's statement.

The crop of beans presented for premium was grown on five-eights of an acre of land, measured. The variety, the white bean, called thousand to one. Half a bushel of seed drilled in, eighteen inches between drills; hoed once; and gathered in September and threshed. The soil was a sandy loam, and has been cropped for the past three years without manure. Yield 22½ bushels.

OTSEGO COUNTY.

The Agricultural Society of the county of Otsego, have paid, since 1st January, 1846, for postages, agricultural transactions, printing bills, &c., for fair for October, 1846, to the amount of $17 15
For premiums at fair, held at Cooperstown, on the 1st and 2d October last, as per list published, ... 286 25
For premiums on field crops, Dec. 19, 1846, ... 51 00
Balance in treasurer's hands, ... 79 51

$433 91

Balance in treasurer's hands, Dec. 22, 1845, ...	$130 91	
By amount received from subscribers, at one dollar each, ...	132 00	
By sales of agricultural transactions, as premiums, ...	23 00	
By amount received from Treasurer of the State, for year 1846, ...	148 00	
		$433 91

HENRY PHINNEY, *Treasurer.*

This society has been organized ever since the law of this State went into operation, in 1841.

The interest felt in its success has been increasing ever since its organization, and it is believed that its next Annual Fair will surpass those of former years.

Premiums on field crops, declared by the Otsego County Agricultural Society, at Cooperstown, December 19, 1846.

For the best acre of wheat, John H. Benedict, Otsego, 28 40.60 bushels, ... $3 00
For the best acre of rye, O. C. Chamberlain, Richfield, 20 21.56 bushels, ... 3 00

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For the best acre of buckwheat, Demas A. Doubleday, Otsego, 27¼ bushels,..... 3 00
For the best acre of barley, Wm. G. Northup, Hartwick, 47 34.48 bushels,..... 3 00
Second best do., O. C. Chamberlain, Richfield, 44 bushels, 2 00
For the best acre of Oats, Abijah Barnum, Otsego, 89 bushals and 1 lb.,..... 3 00
Second best, Laban Matthewson, Hartwick, 69 bushels and 8 lbs.,..... 2 00
Third best, Wm. Davison, Hartwick, 66 bushels,..... 1 00
For the best acre of Indian corn, Wm. Davison, Hartwick, 95 bushels,..... 4 00
Second best, George H. Derbyshire, Hartwick, 94 25.58 bushels,..... 3 00
Third best, Joseph Bennett, Otsego, 87 50.58 bushels,... 2 00
Fourth best, Abijah Barnum, Otsego, 85 41.58 bushels,.. 1 00
For the best acre of potatoes, John H. Benedict, Otsego, 190 bushels,..... 4 00
Second best, O. C. Chamberlain, Richfield, 135⅓ bushels, 3 00
Third best, George H. Derbyshire, Hartwick, 102¼ do 2 00
For the best acree of marrowfat peas, O. C. Chamberlain, Richfield, 20 bushels,..... 3 00
For the best ten rods of carrots, Laban Mathewson, Hartwick, 76 bushels,..... 4 00
Second best, O. C. Chamberlain, Richfield, 69 bushels, .. 3 00
Third best, John H. Benedict, Otsego, 50¼ bushels,..... 2 00

Officers elected for 1847:

Williams A. Walker, President. Williams Rathbun, 1st Vice President. William G. Northup, 2d Vice President. John H. Benedict, 3d Vice President. George W. Stillman, Treasurer. Charles McLean, Secretary, and a Board of Managers of 13.

From the statements presented on field crops, the following are selected:

Winter Wheat—John H. Benedict's statement, Otsego.

The previous crop was about one-half potatoes, and the other half barley stubble. Plowed once; used no manure, and the expense of cultivation was:

Plowing,.....	$1 00
Harrowing,.....	50
Seed,.....	1 50
Harvesting,.....	1 00
Threshing and cleaning,.....	2 00
	$6 00

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Product.

28 bushels 40 lbs., at $1.25 per bushel,.....	$35 83	
		$35 83
Expenses,.....		6 00
Profits,.....		$29 83

Barley—Wm. G. Northup's statement, Hartwick.

The previous crop was corn. The land was highly manured for the corn crop; plowed three times; sowed the 20th of April, three bushels of seed to the acre; sowed the seed dry, and plastered it soon after it came up. The quantity of land sowed was two acres, three roods and four rods.

The whole yield was one hundred and thirty-two bushels 19.48, being 47 34.48 bushels to the acre.

December 19th, 1846.

Corn—G. H. Derbyshire's statement, Hartwick.

The process and cultivation of the land on which I obtained a premium. Land, sheep pasture; soil, dark loam, and stoney; plowed the same once, and harrowed it five or six times. I then marked it out by chaining north and south, three feet apart; then planted in the chain mark, from eighteen inches to two feet, from four to five kernels in each hill. When up, plastered the same; then used the cultivator and hoed the same; then mixed ashes, lime and plaster together, and put a handful on each hill; in about two weeks cultivated and hoed the same a second time, and on the 31st of August cut it up and set it in small stooks.

Proceeds, 94 bushels 25 lbs. Cost, $23.75.

Indian Corn—I. Bennett's statement.

Plowed the ground in the fall previous to putting in the crop; it being stalk land where corn was produced the preceding year. In the following spring I drew out of my barn yard 20 loads of manure which was made by cows the winter previous, and spread it on the land; then followed with a drag until it became thoroughly mixed with the soil; after which, I plowed it again, and immediately afterwards put in the seed. As soon as the corn was out of the ground, I put to every hill a table spoonful of leached ashes; hoed it three times, and added to each hill every time after hoeing, a tea spoon full of plaster. Topped the stalks the first of September, and harvested the crop the last of the same month.

Yield, by weight, 87 bushels and 50 lbs.

QUEENS COUNTY.

The managers of the Queens County Agricultural Society, report, that the past year has been marked by an increased zeal and interest on the part of our citizens generally, in the success of the society, and the cause of improved husbandry.

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It has been particularly gratifying to notice that the farmers as a body have evinced a greater interest in its labors, and a pride and pleasure in its success. And while we rejoice at every sign that indicates that the farmer is soon to avail himself of science and learning in his labors, and be benefitted by the improvements that books and theory are making, and that an enlightened system of economy will take the place of waste and negligence; we cheerfully bear testimony to the assistance we are constantly receiving from the mechanic, merchant and professional man, and the interest with which they watch the labors of enlightened agriculturists, proving the sympathy all classes feel for the great art; yet it is to the farmer that we look for support, not pecuniary aid alone, but to demonstrate the improvements, and show the advantage of science, learning and experience. That the farmer has been backward is notorious, but that a new spirit exists is evident, and we can safely say that in our labors we feel the new impulse. We believe that the usefulness of the society is much extended, and that it is gaining new friends and patrons.

Early in the season it was announced that the fifth exhibition of the society would be held in the following October, and 238 premiums were offered, consisting of:

6 silver cups,
19 silver medals,
9 silver butter knives,
150 diplomas,
178 dollars in cash,
26 volumes of the Cultivator,
2 Guenon's Treatise on Cows,
4 Farmer's Dictionary,
4 Transactions of the State Agricultural Society,
4 " " American Institute,
6 American Shepherd,
10 Bement's Poulterer's Companion,
2 Horticulturists,
1 Downing's Fruits and Fruit Trees of America,
12 Fruit Culturist,
2 Kendrick's American Orchardist,
4 Treatises on Horticulture,
1 Treatise on Fruits,
1 Spooner's Grape,
1 Treatise on the Vine,
1 Townley on Bee's,
1 Landscape Gardening,
2 Mrs. Loudon's Flower Garden,
2 Manual of Roses,
2 Buist's Rose Manual,
2 Florist's Guide,

—

90 volumes of the value of one hundred dollars.

The exhibition was held at Flushing on Friday, the 9th of Octo-

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ber; the weather was very fine, and the attendance of the inhabitants of the county and from New-York city and other parts, was very great; probably some 8,000 were present.

The display of stock was much larger than on any preceding year, and generally very good; some parts were particularly fine.

The products of the dairy were of a superior character; the collection of seeds and of garden vegetables was large and very fine.

No part of the exhibition was more interesting than the display of fruits and flowers.

A large tent of some 100 feet in diameter was erected and in this was arranged not only fruits and flowers, but the vegetables, seeds, domestic manufactures (the display of which was in the highest degree creditable to the taste and industry of the women of the county) and articles of that nature, so as to show to great advantage.

The season was very unfavorable for fruits and flowers, yet of the former there were several extensive collections of apples, pears and peaches; and of the latter it was said by competent judges that the display had never been excelled in the United States.

D. P. Gardner, M. D., delivered an excellent address, that was ordered published.

The officers for 1847, are: William T. McCoun, President. John Bedell, David W. Jones, Thomas B. Jackson, Thomas Valentine, James W. Mott, Hervey Story, Vice Presidents. Oliver S. Denton, Jacob S. J. Jones, William Brayrow, John H. Cornell, Warren Mitchell, James Herrimon, Managers. Albert G. Carll, Corresponding Secretary and Treasurer. Edward H. Seamon, Recording Secretary.

Jericho P. O., L. I.

Wheat—Statement of James Werden.

In the years 1840, '41, '42, '43, the land was mowed and pastured. In '44 there was corn, in the following spring, oats.

Lot No. 1—Sowed September 16th, two bushels to the acre. Manured with thirty loads street sweepings. Spread the manure and plowed it in, then harrowed the land smooth and even, and sowed the wheat and plowed that in as deep as we conveniently could, thereby throwing much of the manure to the surface.

Lot No. 2 was prepared the same way, excepting the quantity of manure, which was twenty loads. The kind of seed used was the "Mediterranean."

Lot No. 1, yield of wheat 30 bushels; expense,.....	$23	50
Product,.....	47	50
Lot No. 2, yield of wheat 20 bushels; expense,.....	19	00
Product,.....	35	00

Ruta Bagas—William Ketcham's statement, Jericho.

The land had been the previous year in corn, manured in the hill, but not heavily.

The soil a light, loose, sandy loam, dry and easily worked. It

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was plowed three times previous to sowing. The first time, about the 15th of April, again about the 1st of June, and again at the time of sowing; sowed about the 1st of July. The ground was plowed the last time deep, say ten inches, and was in fine order; it was manured with guano, spread on the top of the furrows previous to harrowing.

There were 113¼ rods in the piece, and by way of experiment, I marked off eight rods on one side, upon which I put one barrel of fine bone dust from a button factory; cost $1.50 cents. Upon 8 rods adjoining, I put 100 pounds of Chilian guano; which cost $1. And upon the remaining 97¼ rods I put 857 pounds of African guano, at a cost of $14.99.

Upon the first eight rods, which was manured with the bone dust there were 21 bushels of turnips, which cost a trifle over fourteen cents per bushel. Upon the eight rods which had the Chilian guano, there were 34 bushels, which cost a little over seven cents per bushel. And upon the remaining 97½ rods there were 338 bushels, which cost about 7⅞ cents per bushel.

It will be seen by the foregoing experiments, that fourteen hundred weight of African guano which cost $24.50, is almost equal to twenty hundred weight of Chilian, which cost $20; and that it will cost twice as much to manure an acre with bone dust, for turnips, provided the increase of the yield is in equal ratio to the expense applied; as it would with either of the above named manures. The expense of raising 338 bushels from 97¼ rods, were

857 pounds guano at $35 per ton,.....	$14 99
Plowing three times, one day man and team,....	2 00
Putting on guano and sowing, one man, one day,	1 00
Hoeing and weeding, first time, 12 days,.....	6 00
" " second time 3 days, ...	1 50
Harvesting,.....	2 50
	$27 99
Tops worth,.....	2 00
Whole expense, ...	$25 99

Statement of the method used in making the butter exhibited by Caroline E. Seaman.

It was churned the — of October from the milk of four cows giving from twelve to sixteen quarts at a mess.

The milk was strained in tin pans, three inches deep; after standing thirty-six hours in a milk-room where the thermometer varied six degrees, (from 58 to 64) at different hours of the day; the cream was taken off into a stone churn and kept until five messes had been skimmed; then after standing twelve hours, churned at the temperature of sixty-one degrees.

The butter was taken out, salted and worked with a ladle at intervals of nine hours, until the milk was all out.

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This sample received the first premium in the class "Butter made by a girl under 21 years old," and was pronounced by the committee as the best butter exhibited.

Mrs. Margaret Ann Voorhees statement, Flushing.

Mode of making butter, which received the first premium.

The butter was made on the 7th of October, from the milk of fourteen cows; churn with a common churn, with a machine for a dog which saves much labor. The butter is separated from the milk in the common way, with the ladle; I used half a pound of salt to ten pounds of butter for winter butter, but not so much salt for butter made for immediate use. I prefer fine crushed salt. I put the butter in stone pots that hold 20 to 25 pounds each.

The months of May, September and October, are the best for laying down butter. After packing the butter in stone pots, I always put brine and a small quantity of saltpetre over it, and change it every three or four weeks.

Miss Margaret S. Ketcham's mode of making Cheese, to which the first premium was awarded.

When the milk is brought from the yard in the evening, it is strained into a tub, or other convenient vessel, and as much rennet added as will turn it in about five or ten minutes. As there is much difference in the strength of the rennet, the quantity used must be determined by the judgment and trial.

When it is sufficiently turned, or has acquired something like solidity, cut it with a long knife into squares of about two inches each; then spread a thin cloth over it and press it gently with the hand over the surface, and the whey will soon become so much separated that it may be dipped off with a dish, by pressing it on the top of the cloth. When the whey is thus dipped off as much as it conveniently can be, the cloth is spread in a flat open basket, made for the purpose, which is set over a vessel to catch the whey, and the curd removed into it; then turn the sides of the cloth over the curd and subject it to a moderate pressure of something placed upon it; after which it is tied up in the cloth and hung up in a cool place till morning; then cut into slices about an inch thick, placed in a tub and whey heated until a white scum begins to appear on the surface, poured upon it for about eight or ten minutes, often stirring it during this process; after which it is again tied in the cloth and hung up to drain as before.

The morning milk undergoes the same process until it comes to the state of the evening curd, when it is hung up for the night; then that is scalded as the other, and the night curd is put in with it for a few minutes, when it is all taken out together, the whey drained off, and spread out to cool.

It is then chopped in small pieces, salted, and is then ready for pressing. The precise quantity of salt cannot be given, as it must depend upon the state of the curd and the quality of the salt. If

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there is much whey in the curd to be pressed out, it will require more salt. Throughout the whole process, care should be taken not to press so fast as to cause the white whey to run out, as that takes from the richness of the cheese. Two or even three days curd may be kept and pressed in one, if a larger cheese is required. Care should be taken that the curd does not get sour before it is scalded; afterwards there is not much danger.

Mrs. Eliza H. Bell's mode of making Butter.

Six pounds of butter made from a full blooded Durham cow; made in about four days.

This buter is salted with 4 ounces of Liverpool salt, worked well with a ladle, and printed in pounds and half pounds, as done for the Philadelphia market.

I have found the following to be an excellent receipt to preserve butter for winter:

Pulverize two pounds of fine salt, one pound of saltpetre, one pound of loaf sugar, and sift them together into a jar.

When required for use, take one ounce of the mixture to every pound of the butter, work the whole well together. The butter must not be used for several weeks, but must be packed in wood or stone jars, and not in glazed vessels. Butter cured in this way has been kept perfectly sweet for three years.

RENSSELAER COUNTY.

The Annual Fair and Cattle Show of this Society, was held at the city of Troy, on the 23d and 24th days of September. The first day was occupied in registering the animals and articles exhibited, and viewing them by the committees; and in the evening appropriate exercises in music and speaking were had. The second day, a most excellent address was delivered by George Gould, Esq., of Troy, which has been published by the society, and the reports of the several committees were read and premiums awarded.

The exhibition was one of the best ever held in the county. There was a large display of animals, and many were of superior excellence. The show of farm implements and other articles in the mechanical departments was very extensive and attracted much attention. In the ladies' department there was a very rich and varied display, and such as to have secured the admiration of the multitudes in attendance. Of fruits and flowers there was a very handsome display.

It is evident from the immense number of people in attendance, as well as from the great variety of articles on exhibition, that an increased interest is felt in the prosperity of the society, and its prospects of usefulness were never more flattering than at present.

The annual meeting of the society was held on the 2d day of February, 1847, when the annual address was delivered by the President of the society. The report of the treasurer was presented.

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The amt. received during the year, was,.....	$1,438 27
Balance last year, ...	330 10
	$1,768 37
Disbursements for premiums and expenses,.	1,083 34
Leaving a balance of,.....	685 03

There has been received into the treasury during the last five years the large sum of $4,647.58, which has been principally distributed among the farmers of the county, in premiums on farm crops and animals. It was remarked in the annual address before the society, "that in any prize exhibition it is easy to be perceived that there may be some competitors, whose expectations may not be fully realized; but should there occur any such cases in the proceedings of this society, I would respectfully recommend to such individuals as an example worthy of imitation, the spirit evinced by a gentleman of my acquaintance in England, who felt that a committee had overlooked the merits of his animal; and who, on the announcement of their report, simply but promptly remarked, 'Gentlemen, you shall see this animal on the show ground again.' The animal did appear at the next exhibition, and the committee on a more through examination, were constrained to award him the highest premium on the list, being $150. Now this is the true spirit, and the one which should characterize all our farmers, and then their energies would be aroused and the result would be a rapid progress in agricultural improvement within the bounds of the county, which would exceed the anticipations of the most sanguine friends of agricultural improvement."

The following premiums were awarded on field crops:

Potatoes—Jacob Y. Kipp, Pittstown, 265 bus. per acre.

do. Richard C. Derrick, Brunswick, 186½ bus. per acre.

Ruta Bagas—Clark Vary, Stephentown, 543 bus. per acre.

Turnips—Jacob Y. Kipp, Pittstown, 120 bus. (and 10 bus. raddishes) per acre.

Onions—Isaac Lovejoy, Greenbush, 182 bus. on ¼ of an acre.

Rye—Richard C. Derrick, Brunswick, 208¼ bus. from 7$\frac{9}{10}$ acres.

Indian Corn—Geo. Vail, Troy, 158¼ bus. from 2 acres.

do Wm. S. Clapp, Pittstown, 126 bus. from 2 $\frac{37}{100}$ ac.

Flax—Adam Derrick, Brunswick, 121½ bus. of seed, and lint worth $100, from 10 acres.

Flax—Wm. S. Clapp, Pittstown, 8 bus and 28 qts. of seed, and 289 lbs. of lint from 153 rods of land.

The following officers were elected for 1847:

President, Isaac Tallmadge, Scaghticoke. Vice Presidents, John P. Cushman, Troy, Geo. Vail, Troy, Stephen E. Warren, Troy, A. Walsh, Lansingburgh, N. M. Masters, Scaghticoke, Wm. Newcomb, Pittstown, Isaac Brownell, Hoosick, J. S. Lewis, Petersburgh, J. P. J. Haner, Grafton, B. Streeter, Berlin,

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R. G. Pierce, Stephentown, S. Hastings, Nassau, J. Lewis, Schodack, Isaac Lovejoy, Greenbush, J. Minick, Sandlake, J. Hastings, Brunswick. S. H. Terry, Troy, Recording Secretary. J. J. Viele, Troy, Corresponding Secretary. F. N. Mann, Troy, Treasurer. Executive Committee—M. Springer, G. M. Selden, W. S. Clapp, J. L. Cole, M. P. Coons, J. M. Mott, H. S. Perry, I. Miller, Wm. Buswell, Uri Gilbert, H. Rousseau, H. Warren, L. D. Eddy, Jno. W. Haydock, A Knickerbacker, J. T. Davis, E. L. Roberts, A. Derrick, J. B. Ford, A. Briggs, A. R. Fox, I. Akin.

Reports of committees and the statements of competitors for premiums on field crops accompany this report.

Respectfully submitted,
GEO. VAIL, *Prest.*

Report on Farms.—Pittstown.

To the President and members of the Rensselaer County Agricultural Society: Your committee on farms in the town of Pittstown, report,—

That they have examined the farms of all the applicants for premiums in said town, and that the said committee award to Mr. Jacob Y. Kipp, a silver cup, of the value of fifteen dollars, for the best cultivated farm in said town; and the said committee award to Mr. Wm. Warner, ten dollars, or a silver cup of the value of ten dollars, for the second best cultivated farm in said town; and your committee also award to Mr. James Grant, five dollars, for the third best cultivated farm in said town.

Your committee would further report, that on examination of the farm of Mr. Jacob Y. Kipp, they found it to contain one hundred and eighty acres of land, of which one hundred and fifty-five acres are under cultivation, to wit: 3 acres of flax, 14 acres of corn, 5 acres of oats, 3 acres of barley, 6 acres of winter wheat, 20 acres of rye, 3 acres of potatoes, 15 acres buckwheat, ½ acre of turnips, 30 acres of meadow, and the balance pasturage: that 15 acres of the meadow have been reclaimed, from a wild boggy swamp, to a fertile and beautiful meadow, from which he took this year fifty wagon loads, of ¾ of a ton each, of good hay, or 37½ tons of hay; that, by judicious management, he has made each and every one of his fields highly productive; and your committee cannot do justice without saying that his farming is highly worthy of imitation by every good farmer. His buildings, being all in good order, and ample for the accommodation of his family and stock, consist of a good two story farm house, 28 feet by 18 feet; a kitchen 20 feet by 24 feet; a wood house 40 feet by 18 feet; two barns, one 40 by 30, and the other 44 by 32 feet; three sheds, one 20 by 12 feet, one 40 by 20 feet, and one 40 by 20 feet, with linter 20 by 16 feet for an ox stable; a corn house 36 by 24 feet; a hog pen 30 by 20 feet. His stock consisted of 20 head of neat cattle, 4 horses, 90 sheep and 20 hogs.

Your committee feel that they should occupy too much of your

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time to describe more particularly and minutely the said premises, and conclude by saying they found "a place for every thing, and every thing in its place," and that his farm showed the requisites of a good farmer, that is, "he feeds his land before it is hungry, and hoes it before it is weedy, and rests it before it is tired."

Your committee further report, that they found on Mr. Warner's farm of 163 acres, and Mr. Grant's of 90 acres, nearly the same attention to good farming, and also good buildings; finding, in each case, the buildings ample and convenient, and the farms in a high state of cultivation, and the products richly repaying the labor and expense bestowed.

William Newcomb, William Clapp, Committee.

Pittstown, Sept. 19, 1846.

Brunswick.

To the executive committee of the Rensselaer County Agricultural Society:

The committee on farms for the town of Brunswick, respectfully report, that your committee have visited and examined the farms of Joseph Hastings, and Luther D. Eddy, that they found such farms in a good state of cultivation, and that the principal and out-buildings were all in good order. The crops were in fine condition, fences well repaired, and "a place for every thing, and every thi g in its place."

Your committee award the first premium for the best cultivated farm, to Joseph Hastings, being a silver cup, in value $15; and the second premium, of a silver cup worth $10 to Luther D. Eddy.

Theodorus Dusenbury, Daniel S. Greene, Russell Peck, committee.

Brunswick, Sept. 20, 1846.

Butter—Mr. Kipp's statement.

Commenced making the butter on the 10th of August; the number of cows used was five, being native stock, crossed with improved breed. They were fed on pasture and green corn stalks, cut for this purpose only.

Three of the cows were raised by the competitor, and the other two puschased before the 1st of April, 1846. The weight of milk on a given day was 96 pounds, and the quantity of milk on the same day was 56 quarts. The cows were milked twice each day, viz: before sunrise in the morning, and about sunset in the evening. I strained the milk into tin pans holding six quarts, putting about four quarts into each pan.

The pans were placed on slats, elevated eighteen inches above a brick cellar bottom. The milk was then allowed to stand twenty-four hours, after which it was skimmed. After the milk was skimmed, the cream was thoroughly stirred together, and allowed to

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stand twelve hours more, when it was again stirred in like manner, and left twelve hours more, when it was churned by hand; the cream being allowed to stand in the churn during the last twelve hours previous to its being churned. The butter was invariably churned in the morning, and generally before six o'clock.

Unceasing pains were taken, by scalding and airing, to keep the churn, and all the utensils used in making the butter, as clean, and sweet, and free from any cause producing acidity, as possible. A few quarts of cold water were added to the cream just before churning.

The butter was always churned in the cellar. After the butter was churned, it was immediately taken from the churn, and partially worked and salted with the best of Turk's Island salt, after which it was covered air tight and allowed to stand five hours, when it was again worked thoroughly, for the purpose of infusing the salt through every part of it. Six hours afterwards it was again worked, the brine all extracted, and the butter put down in stone jars, closely packed, and covered half an inch thick with fine salt, for the purpose of excluding *all* the air, a thin cloth intervening between the butter and the salt.

The whole number of pounds made during the thirty days, was 196.

Working Oxen.

The committee report, that the oxen were uncommonly fine, some of the most elegant that have ever been exhibited in the county, and without doubt would have taken the State premium, had they been exhibited. For size, symmetry, and nearness of match, it would be very difficult to equal them in any county. The committee are of the opinion that the farmers of Rensselaer county are beginning to understand their true interest in this particular, at least. They have learned that an outlay of $100 in a good pair of working oxen, not only pays an interest but the principal, is earned annually. In other words, a good pair of working oxen pay for themselves every year. They work hard and are kept cheap. In short the ox is one of the most, if not the most valuable animal kept in this country. He is valuable for work, and when well fattened, is above price; so that, whether living or dead, the ox is truly valuable.

Your committee would recommend that in view of the evident and large increase of superior cattle in the county, and the earnest zeal exhibited by our farmers to compete for the premiums, that larger awards be offered next year on cattle.

Hiram Slocum, Bedford Filkins, S. Carpenter, 2d, committee.

Extract from the report of the com. on nonenumerated articles.

On the ground was a two horse power steam engine exhibited by Charles F. Mann, for which he is awarded a premium of $5; attached thereto was an improved check loom, in full operation, weaving upon the ground an elegant gingham. The improvement was

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represented to have been invented by Jonas Binns. This was indeed a gratifying exhibition of American enterprise, ingenuity and skill, proving pretty conclusively, that "a fair field and no favor" is all that is required to enable American industry and enterprise to compete with the world.

Before closing their labors, the attention of the committee was called to a variety of rare horticultural productions from the garden of Alexander Walsh, Esq., of Lansingburgh, among which were 11 varieties of potatoes. There was one called the Ashley Kidney potatato, the vine of which grows only about six inches high. Mr. Walsh states that they were raised the present season, without forcing, fit for the table by the 22d of June. He also exhibited some perennial flax, indigenous to some parts of Oregon, or the region of the Rocky mountains. What its value is for cultivation, the committee have no means of knowing, and can express no opinion.

Also Bladder Nut, Hop Tree, American Peanuts of this year's growth, Teazles, Japan Apples and Monthly Strawberries.

The committee regret that the health of Mr. Walsh was such as to prevent his attendance and valuable aid, in the arrangement and conduct of the affairs of the society. His services have heretofore been of great value to the cause of agriculture, in our county and State. He has had conferred upon him, very deservedly, many of the honors, and taken many of the premiums, of our associations. The committee would console his declining years by this renewed expression of the thanks and confidence of the society.

In closing this report, they feel bound to express their high gratification, at the evidences of improvement in this department allotted to their charge. It added another to the many evidences we have, that our society and our county, are, in all their varied interests, progresive. The agricultural and horticultural exhibitions showed increased attention and improved culture; the mechanical, superior skill and improved artists. The manufacturing keeps pace with, if not in advance of, the other great interests; while the variety of new articles exhibited, is evidence that the mind of our people is active, and the genius of our countrymen is constantly at work; in eliciting new inventions and improvements, in all the various departments of productive labor.

John J. Viele, F. A. Sharpe, J. C. White, committee.

Indian Corn.

To the committee appointed to award premiums on the corn crop:

Gentlemen—On the two acres of land mentioned in the certificate of L. D. Eddy, Esq., a practical surveyor, herewith subjoined, I planted corn the past season. The soil is a black vegetable mould or muck, about two feet deep, based upon a clay bottom. About one half of the two acres was planted in corn the preceding year, and the other half in potatoes. I had, during the fall, winter and spring, about 50 ordinary wagon loads of unfermented barn yard and slaughter house manure drawn on the two acres, and spread

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previous to plowing. The greater portion of the land was plowed twice; and a small part, where the clay reached near the surface, was subsoil plowed. The ground was marked out in rows two feet apart for planting; and before dropping the corn, a handful of compost manure was dropped in each hill. The corn was rolled in plaster, and *not steeped*, and about six grains were dropped in each hill, directly upon the compost. The compost consisted of about one-third slaughter house manure, about nine bushels unleached and fourteen bushels leached ashes, and about twenty bushels coal ashes, and the remainder black muck. The variety of corn planted was the twelve rowed Dutton. The corn was planted on the 14th, 15th, 16th, and 18th days of May. On the 29th of May a portion of the ground was re-planted, the corn not having come up well; but this proved of no use, as I believe none of the last planted matured. The corn averaged about four stalks in the hill. Before hoeing, the cultivator was run through about twenty rows, and was then stopped, the corn being too closely planted to allow of its passing. The remainder of the cultivation consisted in hand hoeing (which was performed twice,) a short time being spent in raising a portion of the corn, which had partially been prostrated by the wind.

The expense of cultivating and securing the crop, and shelling the corn, was, as near as I can well determine, according to the statement given below. In the nature of the operation, it is impossible to be precise in every item of expense, but the outlay cannot materially differ from the following:

50 loads of unfermented manure, and spreading it, at about 3s.,	$18 75
4 days plowing, at 16s.,	8 00
Half day, horse and two men marking out for planting,	1 50
8½ ds. work, dropping compost in the hills, at 6s.,	6 38
About 5 pecks seed corn, at 6s.,	84
Plaster in which the corn was rolled, 2s.,	25
About 7 loads compost manure, at 6s,	5 25
June 12, commenced hoe ng, about 9 ds. work, at 6s.	6 75
June 30, finished hoeing 2d time, 10 ds. work, at 6s.,	7 50
Labor in righting up the corn, about,	1 63
Sept. 4 and 5, about 7 days work, in cutting up corn at the roots, and putting it in stooks, at 6s.,	5 25
From 3d to 20th Oct., about 20½ days husking and cribbing corn, at 5s. 6d.,	14 09
From Jan. 14th to 18th, about 11 days work in shelling, cleaning and measuring corn, at 6s.,	8 25
Interest on 2 acres land, at $100 per acre at 7 per c.,	14 00
Expenses of culture,	$98 44

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The cleaned shelled corn raised on the two acres, measured in a sealed half bushel, was 156½ bushels, and 6½ bushels of nubbing ears, which I call equal to about 2 bushels of good corn; making in all 158½ bushels, which, at present New-York prices, should be worth about 95 cents per bushel.

Eight large loads of cornstalks, which to me are worth $3 a load, to feed to my stock,.....	$24 00
I call the 158 ½ bushels corn worth 78 cents a bushel, which it is selling at now in the Troy market,.....	123 63
	$147 63
Deduct expenses of culture, and interest on land, &c. as above stated,.....	98 44
	$49 19

I certify that the above statement is substantially correct.

GEO. VAIL.

Troy, February 1, 1847.

I hereby certify, that I have, at the request of Geo. Vail, Esq., of the city of Troy, surveyed and staked off *two acres* of corn on his farm, in the town of Lansingburgh, which he informs me is to ascertain the yield of bushels, per acre, for the purpose of competing for the premium on the corn crop offered by the Rensselaer County Agricultual Society.

L. D. EDDY, *Surveyor &c.*

Troy, September 1, 1846.

We hereby certify, that we assisted in cultivating, harvesting, shelling and measuring the corn raised on the two acres of land described by Luther Eddy, on the farm of Geo. Vail, and that the above statement is substantially correct; and that there were one hundred and fifty-eight and a half bushels raised from the two acres; and that it was measured in a sealed half bushel, excepting the six and a half bushels of nubbins, which are put in the above estimate as equal to two bushels of shelled corn, which we suppose to be about correct.

ALEXANDER CLAKIE,
LUTHER PECK.

Lansingburgh, February 1, 1847.

Mr. Clapp's Certificates.

To the committee on corn:

My corn plot, the crop of which I present before you for your consideration, contains two acres and thirty-seven hundredths of an acre. The ground was manured at the rate of nearly twelve tons to the acre. The ground was then broken up from sward, and then harrowed, but not well subdued. We then furrowed it only one way at three feet, then dropped the corn in drills, of eighteen in-

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ches, which came up finely, and in three or four days was cut flat down to the ground by frost; but it rallied again, and got on well till the heavy rains came on, and the water stood upon a portion of it for some days; at length the water dried, or evaporated, and then came an exuberant growth of wild mustard, which, together with the water that stood upon it, much injured the crop. The corn was hoed, or dressed, twice only; the first time but poorly. It ripened, and was cut by the ground standing in a meadow as the plot did; it sustained a considerable diminution from over a hundred lambs that I turned in, to avail myself of the after-feed; which, when discovered, were removed; but, upon husking and gathering the crop, we found many bare cobs; though, after all of these embarrassments, upon threshing and measuring in a sealed half bushel, we found it to measure two hundred and fifty-two half bushels of corn, which is fifty-four bushels to the acre, nearly. I certify the above to be true.

WM. S. CLAPP.

I hereby certify, that I have measured the above described piece of ground, on which Wm. S. Clapp raised corn the past season, and found it to contain two acres and fifty-nine rods.

MILTON B. FELSHAW, *Surveyor.*

Subscribed and sworn, this 15th day of January, 1847, before me.

GEO. MANCHESTER, *Justice of Peace.*

Rye.

To the committee appointed to award premiums on Rye:

Gentlemen—I sowed about 13½ bushels of rye, on seven and nine-tenth acres of ground, on the 25th or 26th of September, 1845, being the same piece of ground surveyed by Martin Springer, Esq. This piece of ground was sowed with flax the previous year, except a small corner which was sowed to oats. The ground was once plowed, and the rye sowed on the furrow, and then dragged in twice. There was no manure put upon the ground for the production of the crop, nor for that of the preceding crop.

The rye was harvested at the usual harvest time, and put in the barn, and we finished threshing and measuring the crop on the 15th day of January last. The product on the seven nine-tenth acres, measured in a sealed half bushel, was two hundred and eight bushels and a half. I certify that the above statement is substantially correct.

RICHARD C. DERRICK.

Brunswick, Jan. 27, 1847.

Ruta Bagas—Mr. Vary's certificate.

This is to certify that I have harvested a crop of ruta bagas this fall, for which I design to compete for the premium. The crop was cultivated in the manner following, viz: I plowed early a piece of land, on which I had potatoes last year, which was not highly

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cultivated; then, about the middle of June, I harrowed and plowed again; then harrowed, and furrowed it out one way three feet apart, and drew on twelve loads of barn yarn manure, which was scattered in the furrows; then ridged it over the manure; then, about the 20th of June, I planted the seed on the ridges, about one foot apart. After the crop was well up, I weeded and thinned them out, and repeated the operation twice, as they grew; the last time taking care that but one turnip stood in a place, hilling them slightly. I harvested as soon as the frost threatened to injure them, and found that I had five hundred and forty-three bushels, measured in a Troy sealed measure. The measurement of the land I submitted to Calvin P. Carpenter.

Stephentown, Oct. 1, 1846.

Flax—Mr. Derrick's certificate.

I hereby certify that I raised, during the season of 1846, on my farm in Brunswick, the following lots of flax:

1st lot.—Raised on three acres, 37 bushels and 20 quarts of seed; the quantity sowed was 2 bushels and 24 quarts of seed, upon land planted the previous year with potatoes; no manure was used. Labor bestowed, 2½ days with team, and 14 days with one man.

2d lot.—Raised on two acres, 26 bushels and 28 quarts of seed; the quantity sowed was 1 bushel and 28 quarts; raised on rye stubble; no manure. Labor bestowed, two days with team, and 9½ days with one man.

3d lot.—Raised on five acres, 57 bushels of seed; quantity sowed 4 bushels and 16 quarts; raised on oat stubble; no manure. Labor bestowed, 4½ days with team, and 23½ days with one man.

The land on which the first lot was raised was not measured; but its quantity as above estimated is correct.

The land on which the second and third lots were raised was measured by L. D. Eddy, Esq., with a chain and compass; but, owing to the absence of Mr. Eddy at the west, I have been unable to get his certificate.

Subjoined is an estimate of the profits per acre of raising the above flax. Expense of 10 acres, $79.93½. Value of product, $231.09. Profit per acre, $15.21.

Brunswick, Feb. 1, 1847.

Flax—W. S. Clapp's statement.

My flax ground was poorly prepared. It was sown after corn, or upon corn hills badly tended. From want of culture, the corn crop was very grassy, and the ground left hard. Neither was the plot well plowed for the flax seed, when the seed was sown, nor were we enabled to get the land mellow when we harrowed in the seed; we were also driven off by a shower of rain, when we had only partly done harrowing, and did not resume.

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The land is of a quality with but a slight mixture of loam ; and, therefore not well adapted to the crop. The seed was cast upon the soil in its *natural state, without being plastered* ; and, indeed, nothing was done farther to promote its growth.

The seed yielded from the above crop, was eight bushels and twenty-eight quarts ; the lint yielded from the above, was two hundred and eighty-nine pounds.

Said above mentioned products of seed and lint, were produced from one hundred and fifty-three rods.

Turnips—Jacob Y. Kipp's statement.

On the 24th of June, the ground, (a piece of sod upon which I feed my stock,) half an acre, was plowed up, and harrowed the same way it was plowed, and cross harrowed. I then mixed five ounces of turnip seed, and three ounces of winter radish seed, with sand, and sowed it broad cast, and dragged it with a bush. This seed was sown the 24th of July ; when well up it was hoed once. The product was 120 bushels turnips, and 10 bushels radishes. Expenses, $5.50. Value of product, $32.50.

Onions—Mr. Lovejoy's certificates.

This certifies, that I have measured the ground on which Isaac Lovejoy raised his onions the past season. I also assisted in measuring the crop, which was one hundred and eighty-two and a half bushels, on forty-six square rods of ground.

NEWTON GREGORY.

Greenbush, Feb. 2, 1847.

The cultivation of the above crop was nothing more than in the usual mode, no manure being used. Onions have been raised on the same ground seven years in succession.

ISAAC LOVEJOY.

Potatoes—Jacob Y. Kipp's statement.

Statement of Jacob Y. Kipp, of Rensselaer Co., in relation to a crop of potatoes, yielding 265 bushels per acre.

The soil from which they grew, is a sandy loam. Crop last year was barley, on which there were 13 loads of loam manure applied. In the spring, applied 13 loads manure, spread, and plowed six inches deep, harrowed twice, and furrowed out two and a half feet apart.

Planted the 13th April, in hills, three pieces in a hill ; the potatoes were cut once in two. In the after cultivation, plowed twice, and hoed twice. Expenses, $37.38. Value of product, $149.06.

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ROCKLAND COUNTY.

The Rockland County Agricultural Society, prepared for the fair and show of 1846, an excellent list of premiums for the farmers and mechanics of the county. Their fair was held, and an increasing interest is manifested in the promotion of agricultural improvement. The show of horses, cattle, sheep and swine was good; and butter, root crops, vegetables and fruit, very encouraging. The plowing match, always a matter of interest at the fairs of our agricultural societies, evinced the attention which had been given to this important branch of agricultural improvement. Discretionary premiums were awarded for a variety of articles of domestic manufacture.

The amount received from members the past year,.....	$41 00
" " Treasurer of the State,.....	36 00
Balance last year's account,.....	4 62
	$81 62
Premiums awarded, ...	78 16
Amount in treasury after paying premiums,.....	$3 46

Officers, 1847 : J. M. Dederer, President, Blauveltville, P. O. Geo. Van Houten, Vice President, do. Jno. E. Hagancamp, Treasurer, Clarkstown. Isaac Sloate, Corresponding Secretary, Blauveltville. Abraham J. Demarest, Recording Secretary, Nanuet.

J. M. DEDERER, *President.*

SARATOGA COUNTY.

To the Ex. Com. of the N. Y. S. Ag. Society :

Pursuant to the act of the Legislature of this State, passed on the 5th day of May, 1841, entitled "An act to promote agriculture," the president of the Saratoga County Agricultural Society, hereby returns all such reports as this society is required to demand from successful applicants for premiums, together with an abstract of our proceedings during the past year.

By the rules and regulations of the society, the executive committee is to meet on the second Tuesday in April, to fix upon the time and place of holding the Annual Meeting, Fair and Cattle Show, to make a list of premiums, and appoint the various sub-committees. This meeting was held, and a list of premiums made and published, amounting in the aggregate to about $275, upon winter wheat, spring wheat, Indian corn, oats, barley, potatoes, peas, beans, carrots, onions, horses, cattle, sheep, swine, household manufactures, butter and cheese, plowing, agricultural implements, fruits and flowers and miscellaneous matters, not properly embraced

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within either of the subjects above designated. Sub-committees were then appointed, with a committee of arrangements, and Saratoga Springs was designated as the *place*, and Tuesday and Wednesday, October 20th and 21st, as the *time* for holding the Annual Meeting, Fair and Cattle Show, for the year now past. A resolution was adopted at this meeting, offering as the third premium on animals and articles, a volume of the Cultivator or transactions of the State society. This was the first and only meeting of the executive committee, until September 1st, 1846.

September 1st, 1846, the committee met, pursuant to the constitution and by-laws, made some little additions to the list of premiums, filled all vacancies in the sub-committees, appointed a committee to examine the accounts of the treasurer, and saw that the necessary arrangements would be made for the annual meeting, after which, they adjourned to the annual meeting.

Annual Meeting.—This was held pursuant to the resolution adopted by the executive committee, on the 20th and 21st days of October, at Saratoga Springs.

The first day was devoted exclusively to the exhibition and examination of animals and articles offered for premiums, and was quite numerously attended by the friends of agriculture from all parts of the county.

The second day was spent in witnessing a very interesting and well contested plowing match, in adopting the reports of the various sub-committees, awarding premiums, election of officers, and in listening to an able, instructive and appropriate address, delivered before the society, by A. B. Olmsted, Esq., of Saratoga Springs.

The following named persons were elected officers of the society for the ensuing year :

Samuel Cheever, of Stillwater, President. Jesse H. Mead, of Galway, 1st Vice President. Theodore W. Sanders, of Corinth, 2d do. Edward W. Lee, of Ballston Spa, Treasurer. Wm. J. Gilchrist, of Charlton, Cor. Secretary. John A. Corey, of Saratoga Springs, Rec. Secretary. Together with a committee of two from each town.

The following gentlemen were appointed delegates to, and *ex officio* members of the New-York State Agricultural Society for the ensuing year : Samuel Cheever, Joseph Daniels, Samuel Chapman, Wm. J. Gilchrist, P. H. Cowen, Jacob Denton, J. A. Waterbury, Stephen Olney and Washington Putnam.

All of which is respectfully submitted.

HENRY D. CHAPMAN, *President.*

Indian Corn—Isaac Loper's statement, Malta.

The following is a correct statement of a crop of corn raised by Isaac Loper, the present season, from 3¼ acres, 425 bushels of ears, yielding 17 quarts to the bushel ears, making 69½ bushels to the acre. Also, five large loads of pumpkins, and a half bushel white beans, besides eating plentifully of green corn from the lot, with a

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family of 12 in number; there was also, 150 hills missing on the piece, at least. About two acres was a stiff sod, which had lain, I think, four years, been mown three, and pastured one year; the balance was clover sod, which had lain one year; the whole was in one piece. I put on and plowed-in about 70 ordinary loads of barn yard manure, and 700 weight of plaster. Manured in the hill a part of it with four loads of fine manure, dropped the balance in the hill with plaster, except a small portion that was omitted in consequence of strong wind. The corn was planted about three feet apart each way, three kernels to a hill, plowed and hoed twice, and plastered twice; planted about the 7th May. Expense for manure, growing and gathering the crop, $55.50.

Potatoes raised by Jesse Morey, on one acre, 255 bushels. Peas, by the same, on two acres, 61 bushels.

SCHOHARIE COUNTY.

The *Annual Fair* of the agricultural society of this county was held at Middleburgh on the 16th and 17th days of October, 1846. A fair exhibition was made, and it was clearly evinced that there is a growing interest in the subjects of agriculture, horticulture, household manufactures, &c., in this county. $178.25 was distributed in premiums.

The following officers of the society were chosen for the ensuing year, viz:

Rev. Paul Weidman, President. Peter Hinds, Joseph W. Courter, Ira Dewey, George Goodyear, Peter I. Borst, Robert McMaster, David Deitz, Vice-Presidents. James S. Waterbury, Lyman Sanford, Jacob Fisher, Daniel Larkin, Gideon Schafer, Members of the Executive Committee. Peter Miles, of Schoharie, Treasurer Jacob Vrooman, of Schoharie, Secretary.

Resolved, That the next annual fair of this society be held at Schoharie.

Oct. 17, 1846. RALPH BREWSTER, *Secretary.*

SENECA COUNTY.

Much interest has been awakened among the farmers of Seneca county, since the last report of the county agricultural society.

The census returns laid before the Legislature during the session of 1846, exhibiting a scale of products in this county, very far below its powers, seems to have alarmed the farmer, inciting him to enquire into the cause of so limited an average product per acre, as 15 bushels of wheat, 14 bushels of barley, 35 bushels of oats, and 27 bushels of Indian corn. Examination and experiment have followed inquiry, showing a determination towards better and greater exertion hereafter.

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The recent Annual Fair and Cattle Show, held at Waterloo on the 22d and 23d Oct., clearly manifested the growing interest felt in the agricultural concerns of the county, at no time has so extensive a show of valuable cattle, horses, sheep and swine been presented for view in this county.

While we rejoice in this increasing interest, there is too much cause for regret in the absence of many of our excellent farmers from the annual meetings, thereby neglecting a duty to themselves, and to their county. The society numbers about —— members, and it offered premiums at the late fair, amounting to about three hundred dollars, most of which were won and distributed. The reports of the several committees appointed to examine the articles offered and to award the premiums, give the following list of persons to whom premiums were awarded, and the objects presented by the several competitors.

On Farms.

For the best farm in the county, to John Delafield. For the second best farm to John L. Hubbard.

The committee speak favorably also of the farm of Mr. Helim Sutton, they urge more extensive draining of wheat lands, particularly in the southern towns, and generally, deeper plowing, with more perfect eradication of the Canada thistle, and other noxious weeds.

On Grain.

For the best acre of winter wheat, 31 bushels, to John D. Coe.

For the best acre of spring wheat, 25¼ bushels, E. S. Bartlett.

For the best acre of Indian corn, 143 bushels, of ears, to E. S. Bartlett.

For best acre of oats, 82¼ bushels, to Jason Smith.

For best acre of barley, 54½ bushels, D. B. Rorison.

On Roots.

For the best ¼ acre of sugar beets, 320 bushels, equal to 1280 bushels per acre, to R. L. Stevenson.

The show of cattle was good, many full blood short horns or Durham, showed good breeding and careful attention; the grade cows manifested an improvement of stock in the county, and induces the belief that a timely interest is now extending itself on this subject in every town.

Sheep.

The number of sheep in this county, may be stated as about 75,000; in 1840, they numbered 63,000; they were generally of merino breed, averaging three pounds of wool per fleece.

It is believed by many of the best farmers of this county, that sheep and wheat will yield more profit in this county, than any other system of husbandry; if this is true, it is not easy to account for the very small exhibition of sheep. The few presented were very good.

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On Household Products.

The products of the dairy, presented at the fair, were extensive, and of excellent quality. Heretofore this county has produced but little, if any, beyond the necessary supply of her own population. The improvement in the breed of cattle, and the great care bestowed upon them, give promise of larger products and of consequence, a large income.

On Mechanical Products.

The instruments and implements used in farming, have not, at previous fairs in this county, presented any interesting objects, neither did the amount of premiums offered, induce expectations of much competition. It was gratifying to notice the increased interest in this department, and the numerous articles offered for inspection, and as labor saving machines, claiming the close scrutiny of the farmer. The want of laborers through the last harvest; the abundant supply and consequent low money value of products; must carry conviction to the mind of every farmer, of the necessity of economising time and labor, by the use of every useful machine which the ingenuity of our mechanics can supply. Hussey's reaper has been introduced with signal benefit, as also his corn and cob-crusher, Seymour's sowing machine, has many and strong advocates, Catchpole's stalk and straw cutter, is another implement of value and economy.

Fruits, Flowers, and Vegetables.

The display was so large in variety, and so good in quality, as to perplex the examining committee; they declared the whole to be good, and that not a poor specimen was presented, and assert that the cultivators of fruit in this county need not be otherwise than proud of the same, especially in the production of apples.

The society placed fifty dollars in the hands of a committee to be awarded to parties presenting unenumerated articles. The committee state that they were overwhelmed by the number and value of the articles submitted to them, and labored painfully under the limited sum placed under their control. Broad cloths of beautiful texture, worsted work of curious workmanship, crotchet work, beautiful hose, curiously wrought quilts and coverlets, flannel, linen, buggies and Rockaway wagons, parlor and cooking stoves, and especially exquisite needle work; these, and a multitude of other articles, caused the room devoted to them to be continually thronged. The committee divided their fund among 57 applicants, intending each to receive it as a memento of approval, and by no means as a reward of merit. So far did ingenuity and merit outstrip their means, many very deserving objects, were, from necessity omitted in the distribution.

The Plowing Match.

This, as usual, offered an object of display of exciting interest to the agriculturist. Thirteen plowmen entered the list, and after

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the usual arrangements, started their teams at the same moment. As good plowing is at the foundation of all good farming, it is to be hoped that plowing matches will increase in interest, and extend an exciting influence among our younger as well as older farmers.

The society assembled for the transaction of business during the afternoon of the first day of the fair, at which time officers were elected for the ensuing year, as follows:

John Delafield, Oaklands, Fayette, President. Jeremiah Rapelyee, of Covert, Alanson Woodworth, of Ovid, Wm. F. Coan, of Lodi, Thomas J. Folwell, of Romulus, Henry Feagles of Varick, Michael Hoster, of Fayette, Fredrick I. Swabey, of Seneca Falls, Daniel Young of Tyre, Orrin Southwick, of Junius, John L. Hubbard, of Waterloo, Vice-Presidents. John D. Coe, Treasurer. Arad Joy, Corresponding Secretary. William R. Schuyler, Recording Secretary.

During the afternoon of the second day of the fair, the court-house was crowded, and full as many as obtained admittance, were compelled to retire after a fruitless attempt to reach the door-way.

The president called the meeting to order, and presented to the Society, a view of the agricultural condition of the county, intended to awaken every farmer to the necessity of a more enlightened course or system of agriculture. He minutely detailed the cost of raising an acre of wheat, under favorable circumstances, and showed conclusively that wheat could not be raised and sent to the mill, at a less cost than twelve dollars and eighty-one cents per acre, or in round numbers, thirteen dollars per acre. Contrasting this cost with the average market value for five years past, he showed that the average produce worked a loss to the county, and was a ruinous course to the farmer. The president then showed that some of the wheat lands of the county had produced from 20 to 35 bushels, and some more, per acre, and pointed out prominent errors in husbandry which produced the falling off; which he termed "a blameable adherence to erroneous practice," and "a censurable want of information." Having illustrated these points, he introduced to the meeting, Joel B. Nott, Esq., the estimable Secretary of the State Agricultural Society. Mr. Nott addressed the meeting, exhibiting in a clear and forcible manner, the state and condition of our agricultural interests; he depicted the natural advantages of Seneca county, in truthful and gratifying colors. Alluding to the diminished products of the county, he pointed out the causes in a manner carrying conviction to every mind; and with a no less happy effort he showed the remedy. His views were so practical, and couched in terms so applicable, that more than once, voices were heard in the crowd, acknowledging their satisfaction. So deeply interested were the audience in his application of practice, and so entirely at ease by his colloquial manner, that members would rise and ask for information upon special points. Mr. Nott's appeal to the young farmers of the county, was happy, and had its influence. He called upon them to

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read and examine, and pointed the road to better and more profitable farming. Every assertion was enforced by illustration, leaving the mind convinced.

After Mr. Nott retired, a resolution was proposed in the following words:

Resolved, That we strongly recommend to the New-York State Agricultural Society, the continuance of the appointment of a competent person to visit the several counties of the State, to give the concentrated information of the State Society, to the great body of our agriculturists, we having already experienced the benefits so largely conferred by the exertions of Joel B. Nott, Esq.

J. DELAFIELD, *President*.

Report on Farms.

The committee on farms, having performed the duty required of them, respectfully report, that three competitors only presented their farms for examination and for the premiums offered by the society. It is a cause of much regret that so few of our farmers were prepared to exhibit their farms, as your committee were ready, and would have been well pleased to visit every part of the county, believing that this branch of duty, required by most or all of the county societies, may have a most excellent effect in benefitting the agriculture of this county.

The competitors were Mr. Helim Sutton, of Romulus, John Delafield, of Fayette, and John L. Hubbard of Waterloo.

On the 27th of July last, we viewed the farm of Mr. Helim Sutton; this farm, like most of the land in the southern division of the county, needs draining, and we found that Mr. S. had made about 350 rods of open ditches, to receive the water of under drains, of which he had constructed about 600 rods. A much greater number is needed on this farm to make the land dry enough for profitable wheat crops.

Mr. Sutton's wheat crop is rather poor, and it is owing, as we believe, to the want of more thorough draining, as the cultivation appears to have been good. The oat crop is good, but we noticed much mustard in the field, and one piece of oats much injured by rag weed; thorough draining, we think, would effect a cure for the rag weed and help to destroy the mustard. The corn crop, although late, looked healthy, and enough of stalks on the ground.

We noticed a number of patches of Canada thistles, part about going to seed. The fences on Mr. Sutton's farm are good, generally of oak rails, a worm fence, a large part of which is staked with perpendicular stakes, confined by wood caps. Every field has more or less pigeon weed. Mr. S. says that he is reducing the quantity of this troublesome weed by breaking up his fallows about 1st July, cross plowing in August, and harrowing immediately; that in three weeks the pigeon weed comes up, then, by harrowing thoroughly, both before and after sowing his wheat, he reduces his pigeon weed every wheat crop.

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This course is against the opinion of your committee, and not according to their experience, believing as they do, that this noxious weed ought to be plowed under before its seed is ripe, say before 20th May, at farthest.

Mr. Sutton has with much care and attention, procured and propagated a variety of the best fruits. The barns, sheds, hog-pens, ash and smoke-house, &c., are all in good repair. His cows, nine in number, are small but in good condition. Mr. S. has a great aversion to anything with the name of short horn Durham.

The committee think that Mr. S. is entitled to great credit for what he has already accomplished, and if he continues to carry out the improvements entered upon, he will not only succeed in making his farm much more valuable, but will cause a most happy effect in the improvement of those around him by the force of good example.

Your committee visited Mr. Sutton's farm again on the 12th of this month, (October,) and were sorry to find such an enterprising farmer, only in the midst of his seeding; part of his wheat was up and looking tolerably well, but a part he was yet plowing. In the opinion of your committee, it would have been far better to have sowed the field next spring, with some kind of summer grain, than sow it with wheat at this late period, and withal rather wet land. On reviewing his ditches and drains, we are of opinion that they are not deep enough to have the desired effect, a foot or eighteen inches deeper, would, we think, drain his lands sufficiently. Until this system of *thorough draining* is fully accomplished, we would advise the abandonment of wheat culture, being fully convinced that on such soils, it must be unprofitable. Mr. Sutton's farm contains acres.

On the 27th July last, we visited and examined the farm of John Delafield, of Fayette. We found this farm under a course of good cultivation, one of the summer fallows in excellent order, though another fallow field was in indifferent condition, not having been well plowed the first time and was not yet cross plowed, with patches of Canada thistles going to seed. The greatest portion of this field was *new land* and *lately cleared of timber*. Mr. Delafield's wheat being harvested, we had not such an opportunity to judge of the crop, but from the appearance of the stubble, and from what we saw in the barns, we believe that the crop was pretty good, and the wheat of most excellent quality. His barley and oats were certainly very superior, consisting of about 26 acres of barley, and 20 acres of oats, the barley was cut and partly housed. From the appearance of this farm, we believe that Mr. D. combines science with his practice, but what may be the extent of profits, we had not an opportunity of knowing. His corn crop, about ten acres, was about an average crop for the season. While on the oat field, we had an opportunity of seeing Mr. D's. reaper, work by a pair of horses; it cut the oats very evenly and rapidly, and from our observation and the information obtained, we think it a very admirable labor saving machine.

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The implements used on the farm, and the arrangement for their safe keeping when not in use, are very complete.

The farm buildings are systematically arranged, with good granaries, bins for roots, and for chaff to steam, in winter for the cattle. Mr. D. wintered his cattle on steamed chaff last season, or at least for the most part, and they came out in good condition in the spring. The cattle and sheep sheds are conveniently arranged with barns. Mr. D's. fences are on a new plan to us, they are laid in the usual worm manner, but the crook or angle is hardly two feet, the stakes are perpendicular, and drawn together near the top by hoop iron, and fastened by a nail drove through into the stake; on one part of the farm, the stakes are fastened near the top by strong wire, they are very ingeniously constructed and economical, as we learned that the cost of the fastenings did not exceed a cent or a cent and a half per pannel. The sheep on this farm, exclusive of lambs, number 170, mostly ewes of the merino breed, from which he sheared 3¼ lbs of wool on an average, and was sold at 26 cents per pound, cash. The cattle consisted of eight cows and some young cattle, all in good condition; a part of this stock is of the short horned Durham breed.

Mr. Delafield works his farm, with not less than three horse teams and often four.

We reviewed this farm on the 12th of this present month, and found the wheat fields green and healthy, having been sowed between the 15th and 24th, of September. The crops of barley and wheat had been threshed and cleaned, also the most of his oat crop.

Mr. Delafield's farm contains 352 acres.

Your committee proceeded next to the farm of John L. Hubbard, of Waterloo; this farm contains 300 acres of land, part a clay soil and part loam, it is under an excellent state of cultivation; we found here, the largest growth of wheat straw that we had seen this season, and the wheat of tolerable fair quality; the Soules wheat the best, the Hutchinson wheat next, the flint the worst. Mr. H. says he has 20 acres of each of the above kinds, and believes, (and we agree with him) that if he had sown all Soules wheat, he would have had a much larger yield.

There are no living waters on this farm, but Mr. H. has abundantly supplied his fields by wells with pumps, sufficient for large stocks of cattle and sheep. Mr. H's. flock of sheep consists of about 300 of the fine wooled kind; their fleeces this season, averaged about 3 lbs. per head from his old sheep, the yearlings yielding about 2½ lbs. per head. He sold his wool this season, at twenty-nine cents per pound.

The fields of this farm are conveniently arranged for stock or for tillage, and we are of the opinion that Mr. H. is managing his farm as profitably under the present state of the market as possibly can be done, but we regret to have to say, that on all the farms offered for premium, we found several patches of Canada thistles going to

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seed and some of them in full seed; now this ought not to be so with any farmer, more especially with competitors for premiums.

The fences on this farm are very superior, they are worm fences of black ash rails, perpendicular stakes with wood caps. Mr. H. has an auger worked by horse power to bore the caps, with a hole of 4 inches diameter.

The corn and oat crop, are, we think, below an average crop this season; the barley crop very large, and we think equal to any we have seen. The hog pens, corn house, ash house and smoke house are good, and economically arranged. The manner of conducting water to the dwelling for domestic purposes, is admirable. Mr. H. has kept the pigeon weed under, by frequent weedings of both wheat and clover crops.

The cattle have a mixture of Durham blood, and are in excellent condition.

We revisited this farm on the 15th of this present month, (Oct.) and found all the farm work in a forward condition, every thing looking well with the exception of the wheat fields, which exhibit the destructive effects of the wire worm, an evil too often disappointing the hopes of the most careful agriculturist.

After having carefully viewed the different farms offered in competition, the most difficult part of our task remained to be performed. After mature deliberation, we have concluded, and do award the first premium of fifteen dollars, to John Delafield, of Fayette; the second premium of ten dollars, we award to John L. Hubbard, of Waterloo; and we are left with many regrets, that the society has not made appropriation for further premiums on farms, as we feel that Mr. Helim Sutton is entitled to praise and credit for his untiring industry to improve his farm, and we have no doubt that his perseverance in draining, *if deeper and more extensive*, will accomplish his fullest desires.

JOHN JOHNSTON, *Chairman of Committee.*
FRANKLIN ROGERS.

Grain Crop.—Report of Committee.

Your committee on grain having examined the statements of the several competitors and the accompanying samples, would respectfully report:

Of winter wheat,	best	acre. 31	bushels.	
" spring "	"	25 23.60	"	
" Indian corn,	"	143	"	ears.
" Oats,	"	82½	"	
" Barley,	"	54 26.48	"	

Your committee would regret that there was no competition in winter and spring wheat, nor in corn; but they considered the number of bushels raised as being sufficient to warrant their awarding the premiums. They would also express their regret that there were

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no competitors for premiums on grain raised from more than on acre.

H. T. E. FOSTER, *Chairman.*
JULIUS BULL,
THO'S J. FOLWELL.

Farmers' Clubs and Town Associations.

The following extract from a letter of J. Delafield, Esq., the efficient President of the Seneca co. society, relative to the establishment of farmers' clubs and town associations, shows the estimation in which they are held, and the interest which is manifested among farmers in regard to them.

"As to town associations and auxiliaries in districts, we have for the last year been engaged in promoting them. You will see by the enclosed circular the course adopted last autumn to organize clubs the endeavor has been partially successful, and I have had the pleasure to address several meetings of from 40 to 60 farmers assembled in the town of Fayette, and to witness an interest well worthy of the high pursuit in which they are engaged. Lectures have been read at the meetings, with illustrations, claiming and receiving due attention, and I am happy to add, that these meetings are looked forward to by our *young men* as objects of pleasure and profit."

Winter Wheat.—John D. Coe's statement.

Raised the present season thirty-one bushels of Mediterranean wheat per acre, on clay loam, highly manured in 1844, and a good crop harvested last year. The stubble was burnt on the half of the field on which the wheat grew; (the field contains 17 acres, and one-half was in barley on clover sod); 2½ bushels was sowed on it with one plowing, the 4th and 6th of September; the field will average 2[illegible] bushels to the acre. This crop boasts of the cheapness of production against expense; it stood up well, and was not injured by the fly.

Thirty-one bushels of wheat at $1.00 per bushel,	$31 00	
		$31 0[illegible]
Expenses.		
One day plowing, dragging, &c.,	$2 00	
Seed,	1 25	
Harvesting,	1 25	
Drawing and threshing,	4 50	
Market,	1 00	
Use of land,	3 00	
		$13 0[illegible]
		$18 0[illegible]

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Spring Wheat.—E. S. Bartlett's statement.

The piece of ground where my spring wheat grew, contains two acres three-quarters and three rods. The land had been a clover sod, and pretty heavily manured, and had corn on last year; plowed last fall in November, and this spring the 19th of March, sowed two bushels of Labrador wheat to the acre; went over it twice with the cultivator, and once with the harrow. It was harvested directly after the winter wheat harvest, and when dry enough, it was threshed as it was drawn in from the field, and the produce from the above mentioned quantity of land was 70 bushels 45 pounds, or at the rate of 25 bushels and 23 pounds to the acre. It will be right to state that the wire worm injured it, to some extent, and from the time that it began to come out in head until it got ripe, it was injured to a considerable extent with a maggot, or rather a little worm about an eighth of an inch long, that located itself in the centre of the joints of the straw, beginning at the top joint and continuing down as far as the third joint, or at least, I found none lower. Their operation was such that hundreds of heads had no grains in at all, and thousands of others were all shrunken grains. It is a new insect to me.

Product,.....	$26 38
Expense per acre,.....	10 40
Profit,.....	$15 98

SUFFOLK COUNTY.

Albany, March 20th, 1847.

B. P. Johnson, Esq., *Secretary of the State Agricultural Society.*

Dear Sir—I hasten to comply with your request that I would give you some account of the system of agriculture practiced in Suffolk co., and I do this the more cheerfully, because on reference to the "Transactions" I find, that whilst the friends of agriculture in other parts of the State have, since the institution of the State Society, from year to year, given you the benefit of their knowledge and experience, we have yet scarcely found a place in your transactions.

The county of Suffolk is longitudinally divided by a range of hills which run easterly through the centre of the island, to the head of Peconic bay, which last separates the island into two branches, at the one extremity of which is Montauk point, and at the other, Oysterpond point.

The surface on the north side of these hills is uneven and broken, alternately divided into hill and valley, while the surface on the south side is generally low and flat.

The county is well watered by streams which, rising in this range of hills, discharge their contents into the numerous bays and harbors with which the coast, on either side is indented.

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The soil is almost as diversified as the surface, varying from a stiff loam to a light sand, and adapted in the various sections to the culture of all the grains, vegetables and fruits usually found in this latitude. It frequently happens that all the different varieties of soil, from a stiff to a very light texture, may be found on the same farm, and often, even, in the same field. Generally, however, the soil of the north side is a heavy sandy loam, whilst that of the south is very light and sandy.

Our system of agriculture is mixed, and almost as diversified as our soil and surface. We cultivate wheat, rye, barley, oats, Indian corn, buckwheat, potatoes, ruta bagas, and in some few instances, beets and carrots.

The course of cropping is generally to turn under the green sward in the spring, and plant with corn. This is for the most part manured with manure from the hog pen turned under, if coarse, or, if fine, applied as a top dressing, harrowed in after plowing. It is also frequently applied in the hill, at the planting. Poudrette also, which is obtained from the factories in New-York, is considered an excellent fertilizer for corn. It is applied in the hill at the planting, and again at the second hoeing. Many experiments have lately been made with guano, but, either because it was not adapted to this crop on our soil, or the proper method of applying it, is not yet ascertained; it has not been successful. Wood ashes, either a little in the hill or mixed with the other manure, is found to be highly beneficial to corn; when applied to the hill is an effectual preventive of the depredations of the grub worm. The corn is dressed out twice with a light plow or cultivator, and hoed two or three times. Many of our farmers top their corn as soon as the tassel begins to wither, and leave the ears standing on the hill till autumn when it is gathered. This is attended with great waste of the stalks; the lower leaves and husks dry up, become insipid and are apt to be broken off and scattered about the field at the time of gathering. The more approved plan is to "cut up" the corn as soon as the ears are fairly filled and the leaves begin to wither, put it up in small stacks, where it is allowed to stand till November, when it is gathered. Stalks thus cured are considered equal to, and for some purposes, even better than English hay. The yield of this crop varies of course, according to the richness of the soil, or the quantity and quality of manure applied; the average crop on good farms may safely be set down at fifty bushels to the acre, though there are many farms which never yield the half of this.

In the succeeding spring the field is sowed with oats. It has not until within a few years been customary with our farmers to apply any manure for this crop. It is now, however, a common practice to manure with bone dust, 10 or 15 bushels to the acre. The increased quantity of the crop more than pays the difference in the cost, and the land is left in an improved state.

Experiments lately made with guano at the rate of 100 to 200 lbs. to the acre, prove it to be a valuable manure for oats.

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The average yield of this crop may be put down at 35 bushels, though many of our best farmers usually get fifty and sometimes 75 per acre.

The oat stubble is usually turned under in the fall and sown with winter wheat or rye, and seeded down to grass. The preparation for our wheat crop is by far the most expensive and least profitable of our whole system of agriculture. It is the large sum necessary to be expended in manure which renders agriculture in Suffolk co. of so little profit to the farmer in comparison to other parts of the State. Many of our farmers on the rich necks of land bordering on the sound, can boast of as fine farms and as well cultivated as any in the State; the heavy outlay necessary each year for manure, is, however, a constant drawback upon the profits. The manure usually applied is that from the barn yard, or when that is lacking, horse manure obtained from the city of New-York, at a rate of about 14 loads, of 30 bushels each, to the acre; the manure costing us on our farms about $1 the load, if purchased; is turned under with the stubble, or applied as a top dressing according as it is coarse or fine. A top dressing of ashes is also deemed almost indispensable in seeding down to grass. Leached ashes are preferred; they are obtained from the cities of New-York and Boston, and many from the interior of this State, at a cost of 12 to 14 cents per bushel, and applied at the rate of 100 bushels to the acre. This dressing not only improves the crop of wheat, but is found to be the most powerful and lasting fertilizer for grass we have used. It is, however, supposed that after one application of this quantity, any subsequent application for many years afterward will have no effect. The land thus prepared is sown with wheat and seeded with Timothy after the harrow, at the rate of 3 to 8 quarts to the acre, and in the spring with red clover, at the rate of 5 to 15 lbs. per acre. The yield of wheat thus treated, varies like other crops, in proportion to the previous condition of the soil, generally from 15 to 25 or even 30 bushels; we rarely go above the latter, and our average crop may safely be set down at 15 bushels. Thus it appears that the crop of wheat pays scarcely half the cost of manure and labor. But it is our hay crop which follows this process to which we look for our reward. This crop usually yields from 2 to five tons per acre, for three or four years, after which it begins to diminish. Indeed, our farmers will, I think, in the course of a few years cease to cultivate wheat, and turn their attention almost exclusively to grass. It is even now cultivated rather because it is considered a convenient method for seeding down a field to grass, than because of any supposed profit arising from it. On the light sandy soil, rye is generally cultivated in preference to wheat.

A word about manures generally. Our farmers have, within a few years, given to this subject greater attention, and far larger quantities have been manufactured in the barn yard than heretofore. The seaweed with which the bays and harbors and the whole coast of the sound abound, and which is driven on the shores by the wind

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and waves, is carted into the yards and hog pens, and is a valuable auxiliary in the manufacture of manure.

It is often, while green, piled in large heaps, where it heats and decomposes, and is then applied as other manures. Sometimes too it is taken green from the water and spread and turned under. For the most part however, it is passed through the cow yard and hog pen. It is palatable to swine, they chew it, root it up, incorporate it with their own dung, and rapidly convert it into valuable manure. Many farmers who reside in the vicinity of the harbors, and are assiduous in collecting this valuable plant, make with it and the refuse of their corn stalks and other fodder, nearly all the manure necessary for their farms. Much too is found to be gained by *saving* manure. Barn yards which were formerly constructed on a hill side with a southern exposure, so that what virtue of the manure was spared from the leaching of rains, was evaporated by the scorching sun, are now for the most part improved so as to avoid this ruinous waste. Weeds and other refuse about the farm which were formerly thrown into the road side as useless, are now passed through the yards, converted into manure, and made to restore, with interest, the substance they have drawn from the earth. Swamp muck and pond dirt are also beginning to be turned to good account. The bony shad or moss bunkers which are taken in great quantities on the south side and east end of the county, are much used as a manure; they vary in price from 75 cts. to $1.25 per thousand, and are valuable for all grain crops, either turned under whole or made into a compost with other manure. They are however very transient in their effects, scarcely ever causing an increase of crop for more than one or two crops.

In many parts of the county are found extensive shell banks, containing clam and oyster shells, partially decomposed, embedded in a rich black mould, and which have for many years been applied with great success for fertilizing the soil.

Muscles, a small shell fish, found in great abundance in some of the harbors on the north side, are considered a valuable and cheap manure, and are much used for ruta baga, beets, &c.&c. The shells are thin, decompose easily, and keep the soil loose and lively. They can be obtained on the shores for $2.50 per hundred bushels, and are spread as a top dressing and harrowed in before planting, at the rate of 300 to 800 bushels per acre. Bone dust, coarse and fine, poudrette and guano, are all now much used, and in many instances supersede the use of ashes and yard manure. Plaster, which is so extensively used in other parts of the State, is of very little service to our land, and is rarely applied except in the centre of the island, where it is used upon clover with advantage.

In fine there is, perhaps, no county in the State in which so much and so great a variety of manure is applied to the land, and where the agriculturist, without science, without theory, so well knows its proper value and right use. Many have hitherto adopted the system of taking from the soil all that could be gathered, without any

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return by way of improvement; but an impoverished soil and diminished crops have shown them the folly of this course, and stern necessity has sharpened their ingenuity and rendered acute their observation. With the vast resources of our bays and harbors, the growing disposition of our people to husband them, and the great improvements gradually developed by science, we hope ere long to make and apply our manure in such a manner as that it will be less expensive and more profitable than at present. Our agriculture is however now far from unprofitable. We annually send to market a large surplus of beef, pork, butter, grain, potatoes, hay, wool, &c. &c.

The remarks made in this communication are necessarily general, but apply to our better class of farms. There is a vast quantity of land cultivated, where not one-half the quantities of manures above mentioned are applied, or a half yield obtained. I have not now space or leisure to mention particular cases, of which there are perhaps many that are interesting among us, or to say any thing relative to our breed of horses, cattle, sheep, &c. &c., but shall be most happy to treat of these subjects in a future communication.

Our county agricultural society was formed in 1841. Its first meetings were spirited and interesting. But the county is so extended and the population so sparse, that it was found *difficult* to bring exhibitors together from a distance, and in 1843 the society was dissolved and a new society formed from a smaller and more thickly settled portion of the county. This society has regularly held an annual fair and cattle show, and has been gradually increasing in interest and the value of its exhibitions. The last fair was held at the village of Comac, in the town of Huntington, on the first of October last, and the great improvement in the exhibition of stock and agricultural products, gave evidence of a growing interest in the agriculture of the State.

J. LAWRENCE SMITH,
Pres't Suffolk Co. Ag. Society.

Culture of Silk.

Henry C. Mather, Brookhaven, Suffolk county, has been engaged in the culture of silk for several years. He has about four acres set with the morus multicaulis mulberry, from which he has mostly fed his worms. Has not had as yet what might be considered a fair crop. The difficulties in tending and keeping his worms clean, have been mostly overcome. His worms are apt to sicken and die after they are mostly ready to wind the cocoons. If this difficulty was surmounted, he considers that he could make the business profitable. He has attributed his failure to his want of experience, as to the proper method of managing and feeding his worms. Is of opinion that the kind of mulberry has some influence. Procured the last year other varieties of the mulberry, and intends to give them a fair trial. In 1845 raised 100 lbs of cocoons, which would give 10 lbs reeled silk. In 1846 did not realize as much.

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White Beans—Henry C. Mather's Statement.

Raised one-fourth of an acre of white beans, upon a corn stubble, soil of middling quality. Land plowed in April, and harrowed. About the middle of May sowed 150 lbs of Peruvian Guano, and went over the ground twice with the cultivator. About the first of June furrowed out the land, two feet distant, dropped the beans from four to six in number, from twelve to sixteen inches apart, in the furrow, and covered lightly with a hoe. Plowed them out twice, and hoed once. The yield was six bushels and 18 lbs, weighing 63 lbs to the bushel. Expenses $3.50. Value of product $7.90.

Ruta Bagas—Henry C. Mather's Statement.

Cultivated three pieces of ground one-fourth of an acre each, as follows: The land which was in grass, was plowed the first of April, and harrowed. About the first of June applied guano at the rate of 600 lbs to the acre, and worked it into the soil with a cultivator. About the 20th of July, plowed the ground a second time and harrowed. Sowed the seed at the rate of 1½ pints to the acre, but a pint is sufficient. Hoed and thinned out the plants. Pulled and topped the turneps in November. The first quarter of an acre yielded 131½ bushels. The second 128, and the third 123. The expense of each quarter of an acre was $4.62.

TIOGA COUNTY.

To the Executive Com. of the N. Y. S. Ag. Society:

I have the honor to transmit herewith the reports and certificates received by the Tioga County Agricultural Society from applicants for premiums, the past and present years, and report the following abstract of the proceedings of the society.

The Fair for 1845, was held at Owego, October 1st, and was well attended. The Hon. Dr. Lee favored the society with an address on that occasion. Premiums were awarded amounting to $77.25, together with several copies of the transactions of the State society. The expense for printing, &c., was $20; leaving a balance on hand for the present year, of $43.22.

The fair for the present year was held at this place, October 1st, and was thinly attended. The articles exhibited for premiums were few in number, though some were of superior excellence. Premiums were awarded amounting to $44.28. There has been raised or secured the present year, from voluntary contributions, $61. This, with a like amount to be received from the State and the balance on hand from last year, makes a total of $165.22, and will leave a balance with the treasurer, after paying all premiums and incidental expenses, of about $100, so that means will not be wanting to offer a handsome premium list the coming year. And the society may, with proper efforts, be put upon an efficient footing; these

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efforts I am in hopes will not be wanting. Still, the interest felt in the society, is confined to a very small number. It has even been difficult to procure persons to act as judges; of thirty-six persons regularly appointed as judges, barely five or six appeared to discharge the duties. A few spirited individuals are anxious to sustain the society, and contribute liberally for that purpose; and but for their continued efforts, the society must soon become extinct.

Very respectfully,

CHAS. F. JOHNSON,

President Tioga County Ag. Society.

Indian Corn—Riley A. Tappan's statement.

Between the 15th and 20th of April, 1845, I plowed up one acre of green sward for the purpose of planting with corn. The land is of a loamy soil, and has been mowed for the last ten years. No manure has been applied during this time, except I have yarded and fed from 40 to 100 sheep upon the said land for the three past winters. All the manure thus made, that could be taken up, was drawn off each succeeding spring. About the 15th of May, I harrowed and furrowed out the said land one way, at the distance of three feet, and planted it the 20th and 21st, dropping the corn in the furrow at the distance of one foot apart, being careful to put precisely two kernels in a hill. I went through it with a cultivator and hoed it out, not far from the 20th of June. I then applied one bushel of plaster and two of ashes in the hill; it was plowed and hoed again the fore part of July. It was then permitted to stand until about the 20th of September; I then cut it up and put it in stooks.

The yield on the above piece was one hundred and seventy-four baskets of good sound ears of corn. Three of the baskets were shelled and measured, producing 23 quarts of sound corn to each basket, and 125 bushels and two quarts per acre.

Indian Corn—Gilbert Pearsall's statement.

I have cultivated a piece of ground with corn this season, containing one hundred and forty-one rods. I have seen the crop of corn gathered, and help measure it, and found that there was on the said ground, one hundred and sixty-six bushels of ears; and we shelled two bushels of the ears and found that they made one bushel of shelled corn. I have no doubt but that there was eighty-six bushels of shelled corn from the ground; at the rate of 97 bushels per acre. I have raised the above amount of corn in the following manner and expense: I placed on the ground on the 15th day of May last, 20 loads of coarse manure; on the 16th, I had the clover sod turned under, and the ground dragged and marked for planting; on the 17th, I had it planted, three feet by two, with two kernels in a place; on the 20th of June, I had it hoed for the first time; on the 12th of July, the second, and took off all the suckers; and on the 11th of September, I cut it up, and on the 2d instant, it was finished, being husked, and found to contain as above stated. The

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same amount of stalks last season, would have given me at least 100 bushels. I have kept a correct account of all the expenses of raising the above crop. Expenses, $7.25.

Oct.

Indian Corn—J. B. Hart's statement.

This crop was raised on a loamy soil that was used for potatoes the past year. Twenty loads of stable and yard manure was spread over and then plowed, about the 1st of May; struck out and planted in rows, three feet apart each way, with four kernels in each hill; planted 14th May. As soon as the corn was up sufficiently to follow the rows, top dressed with plaster and ashes, equal parts; hoed first time without plowing, top dressed again with plaster and ashes; hoed the second time without plowing. Last week in September, gathered 84 bushels sound corn. Expenses, $10.62.

TOMPKINS COUNTY.

To the New-York State Agricultural Society:

The sixth Annual Fair of the Tompkins County Agricultural and Horticultural Society, was held at Ithaca, on the 29th and 30th days of September, 1846.

The attendance on both days was large, and the interest manifested by the farming community, commendable; and as a whole, the exhibition has never been equalled at any county fair ever held in this county.

The exhibition of cattle, horses and sheep, was large, and gave evidence that the attention of our farmers had been given to this important branch of their business.

The committee on vegetables and fruit, report that the collection of vegetables and fruit has not been excelled by any former display at our county fair. They express the hope that our farmers and gardeners will hereafter not limit their exhibition by the bounds of this county; but at the next exhibition of the State society, they will represent the horticultural department of Tompkins county, by the exhibition of specimens as choice as those on which the committee has now had the pleasure of reporting.

Specimens of household productions, such as woolen and rag carpets, knit stockings, coverlets, cotton quilts, &c., were presented for competition; and the committee on miscellaneous, fancy and needle work, say, that "a large variety of worsted and other work was exhibited, beautifully illustrating the ingenuity and industry of the ladies of Tompkins county."

The committee on plowing report, that there were thirteen plowmen entered the match, and that each plowed one-sixth of an acre of land within an hour; that the plowing was highly creditable and meritorious. A part of the committee witnessed the plowing match at the State fair, and are glad to be able to report that the plowing at the Tompkins match was superior to that of the State.

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The annual address was delivered by Benj. G. Ferris, Esq., in the afternoon of the second day, to a large audience; and Joel B. Nott, Esq, corresponding secretary of the State society, being present and introduced, addressed the society in a forcible and interesting manner.

Officers elected for the ensuing year: Joseph F. Hixon, Ithaca, President. O. B. Curran, Ithaca, Recording Secretary. W. L. DeWitt, Ithaca, Corresponding Secretary. N. T. Williams, Treasurer. J. E. Bogardus, Lansing, David Colegrove, Enfield, Chas. M. Turner, Newfield, Albert Toogood, Dryden, E. L. B. Curtiss, Danby, Warren Halsey, Ulysses, Reed Burritt, Hector, P. L. Delemater, Caroline, William Woodbury, Groton, Vice Presidents.

The amount of money received, principally for membership, at fifty cents each, the past year, is $114; which, together with the same amount received from the State, has been awarded in premiums, and paid out for the contingent expenses of the society.

O. B. CURRAN, *Rec. Secretary.*

Ithaca, Feb. 26, 1847.

At an adjourned meeting of the officers and Board of Managers of the Tompkins County Agricultural and Horticultural Society, held at the Clinton House, Dec. 26, 1846: Present, Jacob M. McCormick, President. S. Crittenden, jr., Recording Secretary. A quorum of the Board being also present, N. T. Williams, Esq., Treasurer, reported that the amount of funds paid into the treasury during the past year for membership and donations, is $114.00. That the surplus remaining in the treasury last year, is $49.13. That the amount paid out of the treasury during the year for premiums awarded and for contingent expenses, is $157.06.

The Board awarded premiums the past year on grain crops and root culture as follows, viz:

For the best crop of winter wheat, not less than one acre, the first premium of $3 and diploma, was awarded to William R. Smith, of Ulysses.

For the best crop of barley, the first premium of $2 and a diploma, was awarded to Henry Brewer, of Enfield.

For the best crop of peas, the second premium of $1, was awarded to Henry Brewer of Enfield.

For the best acre of clean clover seed, the first premium of $3 and a diploma was awarded to Henry Brewer, of Enfield.

A full statement of the various crops, &c., for which the above premiums were awarded, was ordered to be furnished to the Secretary for publication.

S. CRITTENDEN, *Rec. Sec'y.*

The following statements of crops of grain and root culture, has been furnished to the Secretary of the Tompkins Co. Agricultural and Horticultural Society, and which were offered competition for the past year.

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Wm. R. Smith's crop of winter wheat.

The field of wheat of Mr. Wm. R. Smith, for which the first premium of the society was awarded, measured eleven acres and sixty rods, and is a part of the Tompkins county poor house farm in the town of Ulysses. The soil on which this crop grew was in part a black muck, and the rest a gravelly clay. The previous year it was cropped with corn, potatoes and peas, after being summer fallowed. Sixty loads of barn yard manure were put upon the lot. Plowed three times, and a part of it four, in order to destroy the Canada thistle, with which it had become partially infested. About two bushels of seed, of the variety known as the Hutchinson wheat, was sown per acre from the 1st to the 4th of September. The ground was but once harrowed after sowing. The crop yielded by actual measurement 378 bushels. Some part of the field was rather wet, and was affected by the winter so that its yield was not all alike. Four acres of the field yielded at the rate of 40 bushels per acre. The following is a correct estimate of the expense of cultivation, &c.

Plowing,	$20 00
Harrowing,	3 00
22 bushels of seed,	22 00
Harvesting and gathering,	16 00
Threshing, 10 cents per bushel,	37 00
60 loads of manure,	15 80
	$113 00

The avails from 378 bushels, at $1 a bushel, is $378, or yielding a net proceed of over $16 per acre, after paying all expenses, and the interest on the land at the rate of $100 per acre.

Mr. Smith also raised on the farm the past season, on 28 rods of ground, 130 bushels of onions, and 34 bushels of onion acorns, together with two bushels of beans, and several bushels of beets. The ground on which the above crop was raised was a part of the garden on the poor house farm; was plowed twice, and planted in rows about 6 inches apart. The seed was the acorn seed.

Henry Brewer's crop of Barley.

I raised the last season, upon my farm in Enfield, on 173 rods of land, which I caused to be accurately surveyed and measured off, forty-four bushels of two-rowed barley, which weighed 50 pounds per bushel. I also raised on the same farm on 148 square rods, (measured as aforesaid) twenty-nine bushels of emir, or skinless barley, weighing 60 pounds per bushel, and four bushels weighing 54 pounds per bushel. The last mentioned 4 bushels were mixed with the common two rowed barley, which run over the sieve while cleaning the second time through the fanning mill. The emir or skinless barley before sowing was brined and rolled in lime; sowed 3 bushels on the piece. The two rowed was sowed without brining 2½ bushels on the piece. At the time of sowing I supposed each piece

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to contain one acre of land. They each contained 4 lands, 6 paces wide across the field. There were 4 lands sowed with flax between the two pieces of barley. I think the emir barley was sowed too thick. I sowed the two kinds to test their relative value as a crop, and am yet undetermined which is the most profitable, though the common two rowed produced at the rate of 50 bushels to the acre, while the emir or skinless produced at the rate of about 40 bushels, allowing 48 pounds per bushel. We have been using the latter in the place of buckwheat, and give barley the preference where the most of the *cornell* is left in or mixed with the flour. The soil is a sandy loam, mixed with slate gravel. The land had been "*hard run*" for the last 10 years, being a very dry warm soil. The land had borne a crop almost every year for 16 years. The field contains about 9 acres. Since 1830 it was cropped as follows, viz: Corn in '30, oats in '31, potatoes in '32, corn in '33, summer fallow in '34, wheat in '35 and tilled with clover, clover seed in '36, summer fallowed in '37, wheat in '38, clover seed in '39, corn in '40, oats and spring wheat in 41, when I measured off one acre which yielded 71 bushels of oats, wheat in '42, mowed for hay and turned over sod, wheat in '43, wheat in 44, corn in '45, and oats, barley and flax in '46. I plowed the ground once N. and S. and harrowed once lengthwise of the furrow, and then furrowed it the same way for sowing; sowed 1 bushel plaster on the acre. Sowed the barley, flax and oats. I sowed it with clover seed and rolled it; no manure used for the barley; about 20 loads common unfermented barn yard manure per acre were used for the corn crop the previous year. When cropped with corn it was usually manured.

I always seed with clover on wheat and sometimes on oat stubble: on oat stubble except when I crop it with wheat. I have used plaster on the lot at all times when seeded with clover. I consider good tillage and clover the best fertilizers for a poor soil.

The expense of plowing, harvesting, &c., is too well known to require from me an estimate. The price of the two rowed barley has been about 3 shillings per bushel; for the emir barley no market price in this county.

I also raised on the same farm, from two acres accurately measured, 9½ bushels of clean clover seed, and 3 pecks of tailings. The land was seeded in April, 1845, on wheat; at the rate of 15 pounds per acre, (besides some chaff the seed from which was nearly extracted,) the large kind. The chaff was the small kind of red clover. The seed (exhibited) is about ¾ of it the large kind to ¼ of the small. The land was cleared off in 1839, the first crop taken off in 1840, and no manure has ever been used upon it. The timber mostly chesnut, oak and pine, leaving nearly 100 stumps on the two acres. The soil is a yellow sandy loam, with a little gravel and some round sand stones. In the fall of 1844, in sowing the wheat, I sowed with it one bushel of plaster per acre, and harrowed it in together. No plaster used in 1845. In the spring of '46 I pastured it from May 10th till the first week in June. After that time I sowed 7 bushels

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of plaster on the field of 7 acres. I began to mow for seed the 24th of August, and as soon as cured, I drew it in and threshed off the chaff from the two acres; that from the rest of the field I stowed away in my barn to thresh in the winter. I begin to cut my clover for seed when there are many green heads, for if left for all to ripen, the first that ripens will be lost in gathering; besides the hay makes good fodder when housed and not permitted to lay out and rot, as in olden times.

The expenses and proceeds of the crop, I estimate as follows:

2 men ½ day mowing,.....	$1 50
2 " raking and putting in heaps, ½ day,.....	75
2 " and boy 1 day drawing in hay, (boy 3*s.*).....	1 88
Threshing and cleaning seed 1 day with 4 horses, machine, 2 men and a boy,.....	5 00
	$9 13

N. B. The price of cleaning seed is 4*s.* per bushel.

Receipts.

9½ bushels clean clover seed at $5,.....	$47 50	
½ bushel tailings, at $2.50,.....	1 88	
		$49 38

N. B. The straw for hay will amply pay for threshing the chaff from the straw.

H. Brewer's crop of Peas.

On 2 acres and 8 square rods of land, a part of same field where this year I raised my barley crop, I raised the past season fifty-four bushels of peas. The land had been mowed for two years previous, twice for hay and twice for clover seed; it is now cropped with winter wheat; soil a sandy loam; no manure used for the crop; plowed only once and sowed on the furrow; harrowed twice and rolled smooth. The kind of peas known as the early Washington peas; sowed 2½ bushels per acre on the 18th of April. On same piece of land I raised my crop of clover seed in 1844, for which I received the first premium, both of the State and county societies. In addition to the above crop of peas, which were gathered and accurately measured, there were from the same ground many bushels picked for green peas of which no account was kept.

ULSTER COUNTY.

To the Executive Com. of the State Ag. Society:

In making the necessary report of the state of the Ulster County Agricultural society, I represent with pleasure that the science of agriculture is steadily advancing in our county. The improved con-

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dition of the farms, the increased demand for manure and the enlarged amount of crops, are striking evidences of the march of improvement. Valuable breeds of stock are annually acquiring greater attention. Notwithstanding all the natural advantages we enjoy in Ulster, not only as agriculturists, but as manufacturers, and the sagacity and enterprise of our citizens to improve those advantages, we cannot boast of a very healthy and flourishing agricultural society. Our Annual Meeting and Fair was held on the 7th, and 8th days of October, in the town of New Paltz. The exhibition was respectable, both as to numbers and character of the specimens exhibited, although inferior to what should have been produced from a county possessing the actual merit of Ulster. The exhibition was attended by a very large number of our citizens of both sexes, and proved an anniversary of much interest to our farmers. Our show of stock of all descriptions reflected credit on the exhibitors; many beautiful specimens of domestic and fine factory cloths gave evidence of the taste and workmanship of our manufacturers. The samples of plain and fancy needle work produced by the hands of the daughters of Ulster, fully sustained their character for genius and enterprise; and taking the exhibition altogether, it came off much better than was anticipated.

There appears to exhist too much apathy amongst our farmers on the subject of agricultural societies, to admit of realizing the many advantages which the institution, if properly encouraged, would be likely to produce. They being steadily and industriously employed in their legitimate farming operations, cannot appear to believe that the time and money necessary to be expended in the advancement of an agricultural society will admit of being a profitable outlay. In consequence of this general indifference on the part of our farmers, we find, it quite difficult, and requiring much effort on the part of a few enterprising individuals, to raise by subscription an amount equal to that given us by the State. With respect to the financial condition of the society reference may be had to the report of the treasurer, which will exhibit the amount of money expended and to whom paid, and for what purpose, together with the vouchers thereof. At our annual meeting the following officers were elected for the ensuing year:

For President, David L. Bernard, of New Paltz. For Recording Secretary, Jonathan D. Ostrander, of Kingston. For Corresponding Secretary, Rodney A. Chipp, of Kingston. Vice Presidents and Executive Committee the same as last year.

All of which is respectfully submitted,

DAVID L. BERNARD.

President of the Ulster Co. Ag. Society.

Dated, New Paltz, Dec. 18, 1846.

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Statement of crops for which premiums were awarded.

Peter Crispell, Jr., Hurley, one acre of oats, 77 2/3 bushels.
do. one acre of hay, 5830 pounds.
do one acre of corn, 89 bus. 4 quarts.
John Crispell, one acre of corn, 84 bus. 12 quarts.
Joseph Arnold, Esopus, quarter of an acre and 4 perches sugar beets, 148 bushels.

WASHINGTON COUNTY.

The sixth Annual Cattle Show and Fair of this Society was held at Cambridge, on the 13th and 14th of October last. The weather on the first day of the fair was very unfavorable and yet the concourse of citizens attending, afforded gratifying evidence that the society is generally regarded with interest and favor. The second day was all we could desire. Th sun rose on us clear and bright, the brighter for the contrast with the day before, and the long lines of visitors that commenced early to pour in from all quarters towards the centre of attraction, gave to the occasion all the activity and gladness of a general holiday; and such it was to the thousands who were there, embracing every class and every calling of our community.

The competition in crops was spirited, and although some of those to which first premiums were this year awarded have been somewhat exceeded in former seasons, yet it is deemed creditable to the intelligence and enterprise of our farmers, that old Washington, long since thought to be almost worn out, competes so successfully with the known fertility and skill of the great and growing west.

Premiums were awarded as follows:

For the best acre of winter wheat, 31 bushels.
do spring wheat, 35 bushels.
do rye, 36 bushels.
do corn, 157 bushels.
For 2d best acre of corn, 139 bushels.
For 3d best acre of corn, 128 bushels.
For the best acre of oats, 70 bushels.
do peas, 47 bushels.
do potatoes, 406 bushels.

The statement with respect to the cultivation of the first premium corn crop was mislaid by the awarding committee and did not come into the hands of the society. The other two crops were each duly and satisfactorily authenticated in every respect, and the statements accompanying them show that the land was very highly manured. Planted first week in May; three kernels in a hill; hills three feet apart one way and eighteen inches the other; plastered in the hill and before first hoeing, and kept clean with hoe, using cultivator first hoeing and plow at second.

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The show of all kinds of domestic animals was in every respect creditable, and the cattle especially, it was said by several distinguished farmers who honored us with their persence and aided with their counsel, would compare very favorably with any thing of the kind in the State.

In the spacious halls of the Washington academy, which had been handsomely tendered to the society for the occasion, were arranged a large display of female handiwork, useful and ornamental; samples of farm and garden produce, and numerous specimens of mechanical ingenuity and thrift.

Merchants and tradesmen from Troy, exhibited beautiful and tempting wares; dry goods, jewelry, books, &c., which added materially to the interest of the exhibition. But large as were the accommodations afforded by the academy, they were not large enough. In this county and it is presumed in most others of the State, few buildings can be found adequate to the accommodation of the throng that attends a cattle show; and in view of this only draw back upon the comfort and good feeling upon such occasions, our society has devoted $100 to the purchase of an awning, to cover a temporary structure to be used as an exhibition room. With this convenience it is believed that future fairs may be held in towns that heretofore been deemed unable to accommodate the show, and thus a favorable impulse may be given to agricultural improvement in distant and hitherto comparatively uninterested portions of the county. (It may perhaps be serviceable to others to say that the cash devoted to the purchase of the awning is a balance paid over to our society by the treasurer of the old agricultural society of 1820.) Our society numbers 166 members, and including the State appropriation of $123, has raised and paid out in the course of the past year's operations, $404.46.

On the evening of the first day of our fair, J. W. Thompson, Esq., addressed us on the dignity and importance of labor, discussing the subject with his accustomed power and perspicuity. In the afternoon of the second day, the throng listened with intense interest to Judge Ball, of Hoosick, who had been selected to deliver the annual address, and most nobly did the address justify the selection. It was beautifully said, that "the pearly drops that gather upon the "forehead of the husbandman as he pursues his daily toil, shed "around his swarthy brow a purer and a brighter luster than ever "shone in a ducal coronet or sparkled in a conqueror's diadem." The farmer felt that to his employment belonged all the dignity of a profession, the face of homely industry beamed with honest pride, and all were made to feel that intelligent educated toil, was a glorious destiny.

Officers for 1847—President, General Orville Clark, Sandy Hill. Treasurer, A. Eldridge, N. White Creek. Corresponding Secretary, Dr. James Savage, Argyle. Recording Secretary, John McDonald, Salem.

JOHN McDONALD, *Rec. Sec.*

Salem, 18 *March*, 1847.

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WAYNE COUNTY.

Lyons, Wayne Co., Jan. 7, 1847.

To the Exec. Com. of the N. Y. S. Ag. Society.

In compliance with the statute, the undersigned cheerfully makes the following report:

The annual fair for the year 1846, was held at the flourishing village of Clyde, in the eastern part of the county, on the 1st and 2d of October. This is the first time it was ever held in that village, and I can safely say that in every respect, it was highly creditable to the county, and furnished additional evidence that the society is steadily advancing in prosperity. In my humble judgement, the exhibition of stock and horticultural produce, equaled, if it did not exceed, the one made at the State Fair, at Auburn. The plowing match on the second day of the fair, occasioned considerable excitement, and was well and splendidly performed by the different competitors.

The officers of the society for the ensuing year are as follows:

President, Reuben H. Foster, Lyons. Vice Presidents, Joseph Watson, Galen, Joel Hall, Marion, James H. Ferris, William P. Nottingham, Palmyra, Henry Shaver, Jr., Jedediah Wilder, Huron, William D. Cook, Sodus. Recording Secretary, Eron N. Thomas, Rose. Corresponding Secretary, John J. Thomas, Macedon. Treasurer, Heman G. Dickerson, Lyons. Executive Committee, Samuel E. Hudson, Palmyra, Truman Heminway, Palmyra, William R. Smith, Macedon, Aaron Griswould, Galen; Albert G. Percy, Lyons, Elizur Flint, Rose.

The annual address was delivered by the Rev. Mr. Ackley, of Clyde, and was attentively listened to by a large and delighted audience.

I regret to state, that most of the reports of the committees were unaccompanied with statements of the practical management pursued; and in no instance, was a description of the breeds of animals which drew premiums, made out. This is obviously wrong, and should not be permitted in future. Annexed to this, however, is an abstract of the report of the committee on farms, and also, so much of the report of the committee on field crops, as was furnished.

R. H. FOSTER, *President.*

Abstract of Report of Com. on Farms. (*J. J. Thomas, Chairman.*)

Wm. P. Nottingham's Farm, Palmyra.—This farm contains 96 acres, mostly improved land, and has been cultivated four years by its present proprietor. The buildings are a comfortable story and a half house, a barn 28 by 54 feet, a cow house, cheese house, and carriage house. The farm is quite uneven, and interspersed with muck swamps. Much has been done in the four years occupancy, in reclaiming these, and in applying muck as a manure to upland. He has reclaimed or nearly reclaimed, about ten acres of swamp; has made about 120 rods of under drain and 70 rods of open drain.

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A large portion of this reclaimed land was formerly considered as not worth $20 per acre; now it is estimated as worth $100 per acre, yielding heavy crops. He has applied muck freely to upland for wheat, about 40 or 50 loads to the acre; the effect is not immediate, but the crop has been increased the second year from one-eighth to one-quarter. The fences are mostly common rail, a part "staked and ridered;" there are about 300 rods of board fence, and about 120 of wall and half wall. The animals are 3 horses, 3 colts, 2 cows, 42 sheep, and 16 swine. He has not kept any regular account of farm crops, and indeed the farm is hardly yet in a sufficiently improved state to admit a regular system of farming, though many and excellent improvements have been made in the short time occupied. The crops, generally speaking, are fair, but not heavy.

John Chapman's Farm, Palmyra.—It contains 160 acres, 30 of which are in woods, roads, &c. He has occupied this farm 9 years, for which he pays an annual rent of $300. The committee observed fine crops of barley, corn, and a part of the wheat. He does not pursue a regular rotation, though the most usual succession is corn, wheat and clover. He sows about 30 or 35 acres of wheat yearly, which affords on an average about 20 bushels to the acre, but not unfrequently he has 30 bushels. He draws out from his barn yard about 200 large loads of manure yearly, which is applied to his corn, and which he regards as benefitting his succeeding crop of wheat, quite as much if not more than if directly applied to the wheat. There are 70 sheep, 16 head of cattle, 11 horses, 40 swine. He has reclaimed several acres of alder swamp, which affords fine meadow. This farm furnishes a fair specimen of good, substantial and profitable farming; the fertility of the farm has increased under his hands, which has of course been attended with a corresponding increase in profit. Success appears mainly dependent on good and thorough plowing, constant manuring, and general good, careful and thorough work in every particular.

Wm. D. Cook's Farm, Sodus Point.—It consists of 200 acres, about 135 cleared land. It has been owned and occupied by its present proprietor about 10 years, and when purchased, there were only 30 acres of partially cleared land. The buildings consist of a neat and substantial house, workshop, root cellar, wagon sheds of large size, large carriage house and horse barn, corn crib, and barn 60 by 50, with additions. The house has a fine cellar, with a hard and smooth water lime floor, and sides five feet high with water lime, totally excluding rats and water, and rendering the former drain for water unnecessary. It contains an excellent hot air furnace, with which one fire warms five rooms, and a hall, and has an iron oven immediately over its stove, which bakes well whenever the furnace is in operation. There are many domestic conveniences about the house. The ruta baga cellar will hold upwards of 1,500 bushels, and is filled, by dumping the cart through a *hole* above, for that purpose. Attached to the barn is a building containing a fixed horse power. The building is 30 feet square, and con-

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tains an inclosed tread wheel 28 feet in diameter, and inclined five feet from the horizon. The horses move it by their weight and need no harness. It has been in operation five years, and in no point has given away or yielded in the least; disconnected with the machine, it moves with the weight of a small boy. A brake stops it almost instantly in case of accident. With the building containing it and its appendages, it cost $300. The thershing machine has an admirable elevator attached, which raises the straw ten feet higher than the machine, saves the work of 4 men needed by the ordinary method, and is so constructed that it is impossible to throw out a single grain with the straw. A Burrall's clover mill (costing $55) is also erected with the horse power, which cleans from 5 to 6 bushels of clover seed per day. An excellent straw cutter is also attached, and all the corn stalks are thus cut by horse power, and on being brined the cattle eat them wholly. Nearly all the hay is chopped, and all the refuse hay left in the mangers, is thus converted into excellent food mixed with grain, and all eaten. A part of the barn cellar is occupied as cow stables, and a part with a continuation downwards of the bay for hay and unthreshed grain. This bay is thus made so capacious that it has held 30 tons of hay under 30 hundred bushels of grain in the straw. The barns contains several other ingenious contrivances and conveniences. The domestic animals consist of 4 horses, 15 young cattle, 5 cows, 1 yoke of oxen, and 150 sheep and lambs. He keeps his sheep well watered all winter, and thinks he saves one-quarter in food and cost in keeping them by this practice, over the common one of abstinence. He has not yet reduced his farming to a regular system of rotation; but never sows wheat after oats, but after clover, corn, barley or flax. Summer fallow, he considers as very expensive, and is only adapted to bring new land into good condition. He considers a growth of clover turned under, and the land then sown with wheat after this one plowing, as a better preparation for wheat than three plowings of summer fallow. *He raises no chess.* He sows the large clover in preference to the small, on account of its greater crop, and the time of its ripening fitting it to be cut at the time for other grass. So great are these advantages, that he would prefer paying a full price for the seed of the larger kind, to receiving the smaller by gift. He sows a part of his clover by spreading the clover straw after it is threshed on the ground, immediately after the grain is harrowed in, and which thus comes up through the straw, and is not smothered. A thin coating of straw thus protects the young plants; manures the surface, and affords a very thick growth of clover, or to use the Doctor's own words, "as thick as the hair on a dog's back." The crops are mostly good, some of them heavy. He has raised ruta bagas for five years. The wheat has averaged about 20 bushels per acre, and he had last year 600 bushels on 21 acres. The corn has yielded from 60 to 75 bushels per acre; it is usually manured with 40 to 60 loads per acre. Potatoes have produced about 200 bushels. He harrows four times as much as

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his neighbors, to crumble and mix soil, and kill weeds; a very valuable and important practice. All the rail fences are "staked and ridered." There are eighty rods of stone wall laid in a ditch one foot deep. This after standing six years, remains perfectly straight and even; other wall, similarly built, but on the even surface of the ground at the same period, begins to tumble. A part of this farm remains in a rough state, but the committee consider that much has been accomplished during the 10 years of its present occupancy.

In all the farms thus visited, the committee could have pointed out defects, and made some criticisms to the society. But that is not their present business, but rather to notice what is valuable and worthy of imitation. Faults can be found in abundance all through the county; perfections are much rarer, and more worthy of notice, and altogether more worthy of adoption.

The three farms entered for premiums cannot as yet be considered first rate specimens of farming, and the committee do not feel authorised to offer to any the highest premium. They would propose a premium of $6 to Dr. Cook's as being decidedly the best, all things considered. They have been somewhat puzzled to decide between the farms of Wm. P. Nottingham and John Chapman, taking all things together, and therefore propose that a premium of $3 be awarded to each.

Abstract of report of committee on Field Crops.

To Eron N. Thomas, of Rose, for one-fourth acre of carrots, yielding 120 bushels, a premium of $2.

To E. D. Cobb, for one acre hay, 4¼ tons, a premium of $2.

To Henry Shaver, Jr., for one acre hay 3 $\frac{6}{20}$ tons, the second premium, vol. Transactions.

To A. G. Percy, of Lyons, a premium of $3, for the best half acre of potatoes yielding 168 bushels. The variety was long reds, the land sandy and gravelly loam; had laid two years since cropping; sward inverted about the middle of November, 1845, harrowed twice last spring, furrowed the first of May, and planted at the rate of 15 bushels to the acre, 4 pieces in the hill. As soon as the rows could be seen, passed through them with cultivator twice one way, about two weeks after passed through them the other way and hoed them. They were afterwards plowed one furrow one way and two the other. There was no manure, other than gypsum, at the rate of two and a half bushels per acre.

To Henry Shaver, Jr., a vol. Transactions, for half acre of potatoes, yielding 148 bushels.

To D. K. Hamilton, for one acre Indian corn, yielding 83 bushels and 24 pounds, vol. Transactions.

WESTCHESTER COUNTY.

To B. P. Johnson, Esq., Secretary State Agricultural Society.

The Society of Agriculture and Horticulture of *Westchester county*, during the past year, has been steadily moving onward to

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the accomplishment of the high purposes for which it was organized. Notwithstanding the many drawbacks naturally incident to the formation of such a society, and notwithstanding the many prejudices it has had to contend with, it may now be safely said that the society is established on a firm foundation, and is in the way of doing much good, by keeping alive in the county a spirit of agricultural enterprise. This, it is presumed, will be effectually done by the "Farmers's Clubs," of which, according to the constitution of the society, there will be one in each town in the county; some of which have been already formed, and others are about being organized. At the meetings of these clubs, the various topics relating to agriculture will be freely discussed, and much valuable information thus obtained, which the intelligent farmer will not fail to apply to a practical purpose. The parent society has held some very interesting meetings; the proceedings of which have been published in the county papers, and thus all have had an opportunity of becoming acquainted with the different topics which have been brought before it for discussion. A fair was held at Sing Sing on Wednesday and Thursday, the 7th and 8th of October last, at which there was a very fine exhibition of the various products of the county; and the cattle show would have done credit to any county in the State. On this occasion there was a large concourse of people from different parts of the county; some interesting addresses were delivered by Judge Lockwood and others, and the whole tended to show that a commendable spirit of enterprise has been awakened among our farmers in this part of the State, which promises well for the future prosperity of Westchester county. The premiums awarded at this fair, amounted to nearly $500, which sum it is proposed to increase at the next fair to about $700. The contemplated construction of the Hudson River Railroad, the stock of which has now all been subscribed for, will open new sources of prosperity to the farmer, by increasing the value of his land, by furnishing him the ready and convenient means of transportation during the whole year, and in various other ways which might be mentioned.

It is very gratifying to know that the vast alluvial deposits which abound throughout the county, are now attracting more of the attention of the farmer than at any former period. These deposits afford the farmer the means of renovating his land at an inconsiderable expense, and it is of the first importance to him, that he should direct his attention to those means of fertilization which are within his immediate reach. The discussion of this subject has already led to the most beneficial results. Many, who before thought little or nothing of these invaluable deposits, have been led to inquire into their nature and application to agricultural purposes; and have thus no doubt, experienced the saving of a very considerable outlay, and greatly enriched their farms. The nature and application of manures in general, have also excited no little attention, and much good may be expected to result from the continued discussion of these subjects. When it is taken into consideration, that the society is yet in its infancy, this brief outline of its proceedings during

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the past year, must certainly be admitted to augur well for its future prospects and usefulness.

R. T. UNDERHILL, M. D., *President.*

New-York city and Croton Point, February 25, 1847.

WYOMING COUNTY.

To the Executive Committee of the State Agricultural Society.

The Annual Fair of the Wyoming County Agricultural Society, was held October 6th and 7th. On the latter day, James C. Ferris was re-elected President. J. L. Hosford, of Castile, Corresponding Secretary. Seth M. Gates, of Warsaw, Recording Secretary, and John A. McElwain, Treasurer.

T. C. Peters, Esq., of Darien, delivered a highly interesting and practical address; a copy of which was requested for publication. The executive committee had settled a list of premiums as early as February 25th, which had been extensively circulated in handbills. At the annual meeting, the following resolution was passed to ensure the raising of funds for the following year.

"*Resolved*, That the executive committee at their next meeting to make out the premium list for 1847, shall select some suitable place for holding the next Fair and Cattle Show, within the limits of such town as shall have paid into the Treasury the largest amount of funds for the current year."

The show of animals and articles presented at the fair, far exceeded any thing we have ever before had in the county; and the attendance on the first day of the fair was perfectly unexampled. *Never have there been so many people congregated before in the county of Wyoming on any other occasion whatever.* Previous fairs and political mass meetings were all thrown into the shade, by this universal *out-turning* of men, women and children, on this, the farmers' and mechanics' annual jubilee, or holiday; thus demonstrating, that in agriculture, horticulture, domestic manufactures and mechanic arts in Wyoming county, curiosity is awakened, interest excited, competition is increasing, and knowledge is running to and fro among the masses, on all these subjects. The permanent success and prosperity of the society in this county, is regarded as a "*fixed fact.*" There is an increasing desire to take part in proceedings and operations of the society, to feel at home in its meetings, and to share in the proud consciousness of doing something to promote its usefulness and the general good. The amount of premiums awarded for the year was one hundred and six dollars and twenty-five cents.

The amount of funds received from the State during this year is $87, and the amount of $87.25 was raised by voluntary subscriptions in the county.

I herewith enclose a few of the reports of committees and accompanying statements, where premiums were awarded.

JAMES C. FERRIS, *President of Wyoming County Agri. Society.*

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Indian Corn—Job Sherman's statement, Middlebury.

A description of the process I have pursued in raising my crop of corn. This is the fourth year I have raised corn on this piece of land, the soil a gravelly loam. The first year it was sward land, I drew on a good coat of barn yard manure, turned it in. The same process was continued the second and third year. Last spring I carried on about thirty loads of barn yard manure, plowed it once, and dragged once, the rows were north and south, the hills three feet apart one way, and three and a half the other. It was planted about the 10th May, and about seven grains dropped in each hill, the kind is the twelve and fourteen rowed yellow corn, the same that I have used for twenty-five years, it is very early. I made a composition of two parts ashes, two of lime and one of plaster of paris, and put a small handful in each hill. It was hoed three times, the cultivator was used each time; put on ashes and plaster after the first hoeing. It was cut up by the ground the 1st of September. I had 164 baskets of ears, shelled one basket, it weighed 36 pounds which makes 5,904 pounds, divide by 56 makes 105 bushels and 24 pounds.

Butter—Newbury Bronson's statement, Warsaw.

Gentlemen—I submit to you the following statement, showing the process of making the butter which is now presented to you for your inspection. It is made of sweet cream only twelve hours old. The preparation for the butter, consisted of two parts of best common salt; one part of brown sugar, and one of saltpetre, being well beat up and blended together. The proportion I used of the above preparation, was one ounce to every pound of butter. It was made in the month of May last.

Warsaw, 6th October.

YATES COUNTY.

To the Ex. Com. of the State Ag. Society:

The sixth Annual Fair of the Yates County Agricultural Society, was held in the village of Penn Yan, on the first day of October, and under very favorable circumstances. It was an occasion in which not only the farmers of "little Yates," but the citizens generally, may well be proud; in fact, it was an epoch in the agricultural history of the county not easily to be forgotten. The number in attendance was much larger than on any previous occasion; and from the smiling faces and general good feeling manifested, all appeared gratified and pleased with the exhibition. The number of competitors for premiums was not as large as usual, but the show of animals, and the products of the farm and garden, and the variety of articles of household industry, were very creditable to the members of the society, and evinced not only a disposition to excel, but at

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the same time to exhibit a knowledge of the means by which excellence and superiority is to be attained. The address delivered on the occasion, was by our fellow townsman, Artemas Biglow, which all admitted to be a masterly effort, illustrating not only matters of science obtained by close application and deep research, but also showing their application in matters practical.

The society has distributed the past year in cash, agricultural books, periodicals, &c., in premiums, about $210.

Below I give you an extract of the proceedings of the winter meeting:

Reports of committees being next in order: H. P. Sartwell, from the committee on "essays," awarded to Charles M. Stark, of Benton, "for the best essay on the most speedy and effectual extermination of red root or pigeon weed," Coleman's agricultural tour in Europe. For the second best, to S. B. Buckley, of Milo, transactions of State society and $2.

John Malory, from the committee on "grain," awarded to Romulus Gildersleve, of Benton, "for the best bushel of wheat of the greatest weight," (being Gen. R. Harmon's improved white flint,) transactions.

To Charles M. Stark, "for the best entire crop of corn," (being 176 bushels of ears per acre,) Coleman's agricultural tour. The second best, to R. Gildersleve, transactions and $1. The third best, to Charles Lee, transactions.

J. A. Hall, from the committee on "roots," awarded to R. Gildersleve, "for the best entire crop of potatoes," (being 275 bushels from seven-eighths of an acre,) $3.

To Charles Starks, "for the best entire crop of carrots," (being 210 bushels yellow carrots from 60 rods,) transactions and $2.

The discretionary committee award to Charles Lee, "for the best farm book account," commencing April 1st, 1846, transactions; and to R. Gildersleve, he having raised 173 bushels winter wheat from 5½ acres, Coleman's agricultural tour.

The society proceeded to the election of officers for the ensuing year: Charles Lee, of Milo, President. J. A. Hall, of Milo, Chas. M. Stark, Benton, Caleb Cowen, Starkey, R. Morse, Barrington, John Dorman, Jerusalem, Henry Husted, Potter, DeWitt C. Gage, Italy, Tho. Semans, Middlesex, Vice Presidents. Artemus Bigelow, Secretary. Fitz A. Stebbins, Treasurer; and an Executive Committee of five.

On motion,

Resolved, That in addition to the thanks of this society, we tender to Fitz A. Stebbins, for the faithful discharge of his duty as treasurer, three volumes transactions of State Agricultural Society.

Resolved, That the "prize essays" be presented to the several agricultural papers in the State, as also our own village papers, together with the proceedings of this meeting, for publication.

Resolved, That the thanks of this society be presented to the president and officers of this society, whose term expires this day,

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for the able and faithful manner in which they have performed the duties of their several stations during the past year.

MELATIAH H. LAWRENCE, *President.*

CHARLES LEE, *Secretary, pro tem.*

Jan. 2, 1847.

I here give you the report of the committee on farms. Committee : C. Lee, U. Hanford and R. Gildersleve.

Your committee have to regret the want of feeling or interest on the part of farmers generally, in competing for the premiums offered by your society on farms.

With the utmost labor and assiduity, both publicly and privately, we were fortunate in persuading one good farmer among the hundreds in our beautiful little county, to present his farm to your society for a premium. It is that of Charles M. Stark, of Benton. And we can assure the society it was with pride and pleasure, we not only looked *upon*, but *into* his praiseworthy and systematic manner of farming.

The farm in question contains about 100 acres; nearly all of which is under constant cultivation. The several lots are run out with compass and chain, numbered ; a map drawn of the same, and a correct account of Dr. and Cr., kept in the form of a "day journal" of the various operations; so that the occupant may never be at a loss to determine whatever he may wish to know in relation to his premises or business. The dwelling house, out buildings and orchard, are ample and well arranged.

The products of the farm for the present year cannot be got at as yet with accuracy, the grain being in the sheaf. Although a mere glance at not only the farm book, but the well filled and crowded barns show too plainly that there has been few *idlers* about those premises, *at least*, during the past summer ; for on referring to "the book," we find the barns to contain 621 dozen of sheaves of Soule, Hutchinson and flint wheat, 50 of barley, 125 oats, 30 tons hay, and 22 loads flax.

Your committee also noticed a field of corn, which we have no hesitation in saying, when the same shall be husked, to be equal, if not superior in quantity per acre, to any crop of the kind raised the present year in the county.

It would, perhaps, be proper here to remark, with the exception of $35 for extra labor paid out, Mr. Stark has had no other help, save that of his brother and a boy at $8 per month, to aid him in his labors. At present, there is but little stock upon the premises, there being but 6 head of cattle, 9 hogs, 4 horses, 2 colts and 15 sheep.

The farming operations of Mr. Stark, in the year 1845, as shown from his book, show the actual amount as sold from the premises during that year, to be $1,565.04.

And, furthermore, such has been the assiduity and perseverance in regard to "noxious weeds," that your committee will venture to

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make the offer, that Mr. Stark will pay $5 per bushel for all the noxious seed gathered on the farm.

Such is a brief statement of the farming operations of Mr. Stark, to whom your committee take great pleasure in awarding your first premium, Coleman's agricultural tour in Europe.

And for aught that has come to the knowledge of your committee, there are hundreds within the borders of our own "little Yates," who can, had they the will or the energy, successfully compete with Mr. Starks.

And why not; unanimous as we all are in the opinion, that no county in the State has a more perfect mixture or better variety of soil, for all farming purposes?

But there does seem to be, among many farmers in our midst, a want of action or attention, to some of the great cardinal principles of what may be denominated "good farming." Your committee trust it will not be deemed officious or out of place here, to advert to one or two important errors which seem, to a great extent, to pervade our whole farming community; and among our so-called "best farmers," too. We have reference more particularly to the management of their manure. Instead of throwing it into heaps and adding foreign and vegetable substances, or drawing it out green in the spring and plowing it under in an unfermented state, it is suffered to remain against the barns and other out buildings, promoting the rapid decay of the same, or scattered over the yard, drenched and bleached by every succeeding sunshine and rain, thereby depriving it of at least one-half of its enriching virtues.

And another fundamental error among us as farmers, in the strict sense of the term, (in this modern day of progress and improvement,) is the want of attention to the raising and breeding of stock. Few counties in the State produce better or even more hay or pasture per acre than this; and yet our stock is inferior, greatly inferior to that of most of our surrounding sister counties.

The reason is obvious: on their part the best pure blooded animals are introduced; they are well fed in winter on hay and *roots*, and housed in warm comfortable stables; in the spring they come out in good condition and are turned into good pasture. Our breeds are mostly native, and rapidly depreciating in quality. Many of our farms are over stocked; and from the stinted manner in which most of us throw out, to the bleak *winds* and *mud* our *musty straw*, in the spring, the sequel need not be told.

If some of our wealthy patriotic citizens would unloose *their* purse strings, and soften down their bumps of benevolence, and introduce into our midst pure blooded stock of the most approved breeds, it is believed, the money expended would prove a profitable investment; if not, they would enjoy the high satisfaction of having contributed to the prosperity, and of being entitled, at least, to the thanks of their surrounding citizens. (C. M. Stark's prize essay ante p. 435.)

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STATEMENT

Of Premium Crops reported to the State Agricultural Society, for the year 1846.

COUNTIES.	Winter wheat: No. bush. per acre.	Spring wheat: No. bush. per acre.	Indian Corn: No. bush. per acre.	Oats: No. bush. per acre.	Rye: No. bush. per acre.	Barley: No. bush. per acre.	Peas: No. bush. per acre.	Beans: No. bush. per acre.	Potatoes: No. bush. per acre.	Ruta Bagas: No. bush. per per acre.	Carrots: No. bush. per acre.	Sugar Beets: No. bush. per acre.	Onions: No. bush. per acre.	Buckwheat: No. bush. per acre.	Hay: No. tons per acre.	Turnips.
Broome,	32	.....	72	79	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	112	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cattaraugus,	.....	.....	104	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	73	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cayuga,	.....	.....	113	.....	.....	.....	.....	.....	.....	.....	711	794	.....	.....	.....	.....
Chautauque,	39	.....	115	.....	.....	.....	.....	.....	.....	.....	•194	.....	.....	.....	.....	.....
Chemung,	33	.....	.....	80	.....	.....	.....	.....	266	.....	.....	.....	.....	.....	.....	.....
	.....	.....	.....	69	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chenango,	.....	.....	102	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	101	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	30	.....	104	.....	28	32	44	31	220	.....	987	1,139	.....	.....	.....	.....
Clinton,	24	.....	83	.....	.....	.....	24	.....	192	.....	.....	.....	.....	.....	.....	.....
	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Columbia,	22	.....	41	71	36	.....	.....	.....	220	.....	.....	.....	.....	.....	.....	.....
	.....	.....	154	.....	.....	.....	.....	.....	198	.....	.....	.....	.....	.....	.....	.....
Cortland,	.....	.....	136	.....	.....	.....	.....	.....	126	.....	.....	.....	.....	.....	.....	.....
	.....	.....	126	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dutchess,	28	.....	.....	78	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	97	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fulton,	.....	.....	87	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	118	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Herkimer,	.....	.....	117	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	35	26	.....	68	.....	56	39	.....	195	.....	.....	.....	.....	.....	.....	.....
Jefferson,	28	23	.....	65	.....	55	38	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	.....	.....	.....	42	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	93	91	.....	48	48	.....	324	.....	.....	.....	.....	.....	.....	.....
Lewis,	29	29	92	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	78	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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STATEMENT — (CONTINUED.)

COUNTIES.	Winter Wheat: No. bush. per acre.	Spring Wheat: No. bush. per acre.	Indian Corn: No. bush. per acre.	Oats: No. bush. per acre.	Rye: No. bush. per acre.	Barley: No. bush. per acre.	Peas: No. bush. per acre.	Beans: No. bush. per acre.	Potatoes: No. bush. per acre.	Ruta Bagas: No. bush. per acre.	Carrots: No. bush. per acre.	Sugar Beets: No. bush. per acre.	Onions: No. bush. per acre.	Buckwheat: No. bush. per acre.	Hay: No. tons per acre.	Turnips.
Madison,	.....	.....	112	.....	.....	.....	.....	.....	.....	.....	1,175	.....	.....	.....	.....	
	.....	.....	106	77	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
N. Y. State Society,	.....	21	124	55	.....	57	47	.....	.....	.....	1,200	774	.....	.....	.....	
	.....	.....	112	.....	.....	44	.....	.....	.....	.....	909	.....	.....	.....	.....	
Niagara,	.....	.....	104	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
	.....	40	89	.....	.....	.....	.....	.....	.....	.....	784	.....	.....	.....	.....	
Oneida,	.....	22	124	102	.....	56	55	.....	231	637	1,001	.....	.....	.....	.....	
	.....	21	104	79	.....	49	37	.....	159	.....	.....	.....	.....	.....	.....	
	.....	.....	90	57	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Ontario,	.....	60	.....	67	.....	57	.....	†34	.....	.....	.....	.....	.....	.....	.....	
	.....	.....	90	.....	.....	56	.....	.....	.....	.....	.....	.....	.....	.....	.....	
	.....	.....	87	.....	.....	55	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Orange,	.....	32	139	93	.....	61	.....	.....	.....	.....	.....	.....	.....	.....	.....	
	.....	.....	108	49	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
	.....	.....	99	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Oswego,	.....	.....	147	.....	.....	.....	.....	‡23	190	.....	.....	.....	.....	28	.....	
	.....	29	96	89	20	48	20	.....	135	.....	.....	.....	.....	.....	.....	
Otsego,	.....	.....	94	69	.....	44	.....	.....	103	.....	.....	.....	.....	.....	.....	
	.....	.....	88	66	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
	.....	30	85	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Queens,	.....	20	.....	.....	25	.....	.....	.....	265	643	.....	.....	§182	.....	.....	120
Rensselaer,	.....	.....	79	.....	.....	.....	.....	.....	186	.....	.....	.....	.....	.....	.....	
	.....	.....	61	.....	.....	.....	.....	.....	265	.....	.....	.....	.....	.....	.....	
Saratoga,	.....	.....	70	.....	.....	.....	31	.....	.....	.....	.....	.....	.....	.....	.....	
Seneca,	.....	31	72	83	.....	66	.....	.....	.....	.....	.....	1,280	.....	.....	.....	

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Tioga,			126												
			97												
			84												
Tompkins,	40					44	26					592			3
Ulster,			89	77											
			84												
Washington,	31	35	157	70	36		47		406						
			139												
			128												
Wayne,			84						336		480				4
									295						3
Wyoming,			108								1,044				
			105								1,096				
Yates,	34		88						320						

* On one-eighth of an acre. † On 134 rods of land. ‡ On five-eighths of an acre. § And 10 bushels of radishes on 46 rods.
The fractions in the above table are omitted and the numbers made even.

The amount paid in premiums by the several Agricultural Societies, during the past year, so far as can be ascertained from the returns and other sources, exceeds *fifteen thousand dollars.*

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The following is the substance of a circular which has been forwarded to the presidents of the several county societies, and is published for the purpose of drawing the attention of applicants for premiums, as well as the officers of the societies, to the suggestions contained in it.

AGRICULTURAL ROOMS,
Albany, 1847.

Sir—The New-York State Agricultural Society are desirous of obtaining hereafter more full and complete reports from the county societies; and to aid in accomplishing this, the following particulars are respectfully suggested as worthy of attention.

1. A report from the president, giving an account of the proceedings of the society during the year; its receipts and expenditures; the awards of premiums on grain, roots, &c., with the number of bushels per acre; the condition and prospects of usefulness of the society, &c.

2. A statement, as particular as can be given, of the principal agricultural products of the county, and amount of the same; the average yield per acre of grain, Indian corn, roots, hay, sugar, silk, fruits, &c., and the quantity of butter and cheese per cow; the place where products are marketed, and prices; and the value of the agricultural products of the county, specifying each separately.

3. Statements made by applicants for premiums on grains, &c., as required by sections 3d and 4th of act of 1841, page 14, first volume of Transactions State Society, with the reports of committees.

Extracts from sections 3d and 4th.

3d. "Provided always that before any premium shall be delivered, the person claiming the same, or to whom the same may be awarded, shall deliver in writing to the president of the society, as accurate a description of the process in preparing the soil, including the quantity and quality of manure applied, and in raising the crop, or feeding the animal, as may be; and also of the expense and product of the crop, or of increase in value of the animal, with the view of showing accurately the profit of cultivating the crop, or feeding or fattening the animal.

4th. "And the said presidents of the several county agricultural societies shall annually transmit in the month of December, to the executive committee of the New-York State Agricultural Society, all such reports or returns as they are required to demand and receive from applicants for premiums, together with an abstract of their proceedings during the year."

4. It is believed that the organization of town associations and farmers' clubs, may prove beneficial; and it is respectfully suggested, that an effort be made to organize them in your county, for the discussion of agricultural subjects.

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5. It is recommended to county societies, to require of applicants for premiums on grain and root crops, that they *measure or weigh the entire crop presented for premium*, as required by the State Society, so that a correct result may be obtained, and the same rules prevail both in the State and county societies.

6. Endeavor to enlist the farmers in competing for premiums on grain and other crops, at the winter meetings of the State Society, as well as on cheese and butter dairies, and experiments in fattening animals, &c.

AGRICULTURAL DISCUSSIONS.

The proceedings at the meeting of the 11th of March, relating to Agricultural Schools, were accidentally omitted in the order in which they should have appeared, ante p. 482. They are now given, so as to present the whole of the discussion on that subject.

The chair was taken by the Hon. J. P. Beekman (of the Senate.) The President announced that the subject of *Agricultural Schools*, whether they were necessary and proper to be established, would be continued.

Mr. B. P. Johnson reviewed the course of remark which had been had on this subject at the last meeting, by the different gentlemen who had then spoken, and expressed himself renewedly in favor of an union of science with agriculture, of an educated nation of agriculturists.

He had received what had indeed gladdened his heart, a communication from a dairyman, asking him if he could not send him a person who could analyze the soil, the grasses, the seeds, to see what course he should adopt that would result in enabling him to make the best cheese, such as he could sell, not only at home, but in England. It was worth every thing to know that there was one man in our State who was awake on this subject. He wanted to know if there could not be sent to him an instrument which would enable him to judge in regard to the qualities of his milk, so that he might know which cow yielded the best milk, and best adapted to the purposes of the dairy; and he was rejoiced to be able to inform his friend that all his enquiries could be answered. He ascertained of Professor Emmons, that in connexion with the Geological survey, he was engaged in the examination

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of fruit trees and of grasses; in ascertaining the very facts desired, and he authorized him to say that he would go in person, should it be desired, at the proper season and aid the inquirer. This letter was worth every thing. It was part of the results produced by a circular, which was drawn up last year under the direction of the executive committee. It was encouraging to feel that the people were arousing in regard to a higher standard of agriculture; and it was time, for the great west was upon us with all her mighty yield, and if we would successfully compete with her, we must make our crops up to the standard of premium crops, or nearly so.

Mr. J. alluded to the fact that a much larger number of county societies had thus far made their reports to the State Society than in preceding years, and that a very interesting series of facts would be embodied in the annual collection.

The yield of Indian corn, as reported in eleven counties, exceeded 100 bushels to the acre, and in one of these counties, where 123¼ bushels per acre was reported, and for which the first premium was awarded by the State Society, the whole crop was harvested, and after it became merchantable, was threshed, sold to the miller and ground, and was pronounced equal to corn of the previous year. Here was all the evidence necessary to satisfy any man of the fact.

In one county, a fraction less than 60 bushels per acre of wheat had been raised, and the evidence equally satisfactory. In eight counties, the yield of oats exceeded 70 bushels per acre, the largest yield being 102 bushels.

These facts were mentioned to show what had been done, and he doubted not that they might and would be repeated when our land was cultivated and prepared as it should be.

The President, Mr. Beekman, said that in past years he had given much time and thought to the propriety, necessity and usefulness of agricultural schools. His impressions of the action then had on this subject, were not now so vivid as formerly, and what he would have to say at this time, would be more in reminiscence than otherwise.

This subject was discussed as far back as 1830, but no application made to the Legislature for the establishment of an agricultural school. It was not then deemed expedient. Judge Buel and others took a deep interest in it, as did all the members of the New-York

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State Association, established in 1832, and finding that the Legislature were not disposed to extend to it an appropriation, (its doubtful expediency, the probable cause) and for myself I had very little faith in an appropriation from the State for such purpose; it was finally proposed to obtain a charter for an agricultural school, and make it a joint stock company. In 1836, a charter was obtained, the capital stock two hundred thousand dollars; the stock to be raised by private subscription; each share to be twenty-five dollars; no one at first to subscribe over one thousand dollars. Trustees were appointed to carry the charter into effect. Their number was to be thirty-two, of which the Governor and Lieutenant Governor were always to be two. These Trustees were to have the management of the school. A committee appointed by the Governor from the members of the Legislature were to report to each successive Legislature on the state of the school. Judge Buel and myself and others, were appointed a committee to collect subscriptions. It was a time which seemed prosperous; it was during what has since been designated the *inflation*. We obtained subscriptions to about ten thousand dollars in Albany. This was in May, 1836. We agreed to go, during the season, to the south part of the State, to see what could be done there, as we had promises from several gentlemen to aid us; but the *revulsion* came on, and it was judged inexpedient to proceed, and so it was put off until the next year; but the difficulties increased, and the plan was given up and not pursued. I do not know whether the charter has expired or is still in existence. It exists, if at all, only as an historical fact.

With respect to the necessity of agricultural schools, my mind is fully made up that it is a most desirable object. Look at the state of our agriculture! A year ago last winter it became my duty to report on the best cultivated farm in the State; and the agricultural statistics laid before me, showed that in the State, the average product of rye was about 9 bushels to the acre; of wheat from 11 to 12! and in the county of Monroe, the best wheat growing section of State, only 19; buckwheat less than 20; corn less than 20; potatoes 80, and other crops proportionably. Now we see in different parts of the State, crops of corn raised above 100 bushels to the acre! 140 and 150 are raised, not merely one year, but for several successive years. I once doubted whether 100 could be raised, but the proofs were laid before me, and my scepticism was removed. If 100 *can* be raised, why should we be content with 20? It is only to let our heads help our hands, and we can increase the average of all very considerably. It is in this way that great results can be ob-

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tained. I remember that the reports of the Washington county society showed an astonishing result, for which a premium was given. Very large products were raised, and the truth of the statement was well authenticated. And yet Washington is an old county, where the land is said to be exhausted, and there great crops were not raised from land freshly cleared, while it has all its strength, but from this exhausted land. It was because they improved the soil; and when it seemed to have lost all its fertility, they took the right measures to restore it and bring back the good qualities.

There will always be great diversity of opinion in respect to all the operations of farming; as to plowing, sowing, manures, the application of ashes and plaster, &c., the manure of the chemist and the barn-yard. It is high time, among our intelligent people, that we should bring these varied opinions to a focus, to some point, so as to find out the best way of making our farms most successful. And in what way shall this be done? Should we follow the old method and do nothing? Can we not adopt method? And what way can be better than in the first place to inform ourselves of the composition of the soils, and how to add to their fertility? To get this knowledge in advancing our present pursuits, what better way than to study agricultural chemistry; the composition of all the grains we use, and what is best adapted to their growth, what enters into their composition, and what benefits them? How *can* it be better done than by acquiring systematic knowledge?

There is every thing abroad to encourage us. In Europe it results in raising double, treble what we do, and who will say our soil is not as good as theirs? We work our soil too much, so that it degenerates, and yet neglect to inform ourselves thoroughly of the means of restoring it. By the establishment of an agricultural school, agricultural chemistry, botany, mathematics, mensuration, would be taught; young men attending would get habits of industry, they would learn how to keep farm accounts, and lay up a store of general intelligence; no matter whether they were the sons of rich or poor, they would learn to work. Taught there, after being prepared for it in the common school, all the sciences would be useful to them as agriculturists; they would come out to be serviceable, industrious, accurate, systematic, farmers; men, both in information and their position in life, independent.

If such a school should turn out an hundred men, their influence would soon reach every part of the State. Their minds would be prepared for systematic farming, and many, many others would soon

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follow their example. The influence of a good example is very great. Whoever does his work well is sure to succeed. Let a good and skilful farmer settle in a neighborhood and pursue his occupation in a regular and systematic manner. Let it be seen in the condition of his house, barn, his fences, his crops, his cattle. How soon will it provoke the jealousy of the others around him, (such is the natural impulse of the human mind,) and how much will his example effect towards reclaiming the entire neighborhood and make them all men like himself?

Mr. B. went on to speak of the far-reaching good which the establishment of such a school would produce, in sending forth its educated farmers, each one competent in himself to lecture on the various connexions of science, of knowledge with agriculture, and each one a centre of sound, practical information.

For myself, said Mr. B., I am averse to any legislative appropriation for this object. I believe it is better that it should be begun by individual effort. I have thought that an appropriation by the State would do more hurt than good. I would willingly take hold, willingly subscribe, feeling its great usefulness and necessity.

Mr. B. suggested a reference to the memorial presented to the Legislature in 1836, and to the reports of the committees then made, to show what was then thought of its usefulness. His own views were strongly wedded in favor of such a school, and he stood ready to give it his aid.

Hon. Mr. Williams (of the Senate) said that in attending, as he had sometimes done, during the winter of 1846, the agricultural discussions, he had been impressed with regret at seeing so few farmers take part in them. They were generally too much devoted to the details of their business to turn aside and discuss the great principles of science on which their pursuits were founded. He had, however, listened with great pleasure to-night to the remarks on the subject of an agricultural school. It was one of great importance, and merited careful, systematic investigation. The idea that very considerable manual labor could in a school of this kind be connected with assiduous study, he thought would prove futile, unless the school was arranged on a most extensive and expensive scale. It might be when the labors of each class were confined to some specific department of labor, but when the whole range of agricultural labor was to be performed, it would be found that the time of labor encroached on that of study, and the hours of study interfered

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with the arrangements for work, and the amount of knowledge derived, after all, might be such as to induce the scholar, on leaving the institution, to pursue a different avocation in life. The difference between what the student learns, and what was gathered by the practical farmer, was, that while the former, from the very necessity of the case, theorised, the latter was constantly combining his doctrines in respect to soils and their culture to practice. They were forever testing before his eyes. It is in this way that the greatest proficiency in agriculture is achieved. The theory of agriculture is one thing; to develope it under the broiling sun of July is quite another. He doubted very much (and the observation of every year only confirmed this opinion) if men ever made good practical working farmers who had not followed it from early life, who had not by long practice, become inured to its realities. There were many capital fancy farmers, but it was a question of serious consideration whether their crops did not cost more money than was ever brought back by the results of their farms. The best school was the daily practice on the farm. Then and there it is that the experiments are reduced to practice.

Mr. W. stated that he did not intend to be considered as in any wise opposed to the establishment or plan of an agricultural school, but it was right that the difficulties as well as the encouragements should be pointed out. Suppose that by the aid of the State Treasury, one hundred of these scholars left each year, with a scientific agricultural education, would that be of sufficient value to the State to warrant the expenditure? and of that hundred, after such an education, would more than 15 or 20 be likely to carry out their learning in the actual practice on a farm?

Mr. W. here examined the statistics of extraordinary production and yield, which had been read by the Secretary, and urged that it was not best to judge too hastily in respect to them. They may have been, they probably were isolated instances. The peculiarity of the soil in this or that instance might have induced a great crop. It might have been the work of this year, and never before or never since. The causes which effected it now might be inoperative again. These were unsafe data, and it was best to know all the circumstances. The land might for a series of years have been used for one species of crop, and the elements necessary to produce another might have lain dormant until brought out by a combination of circumstances, and then have put forth all their strength. Mr. W. reviewed one particular instance of great yield which had been cited, and

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urged that if the farmer in that case had known all that his land could do, all about his soil, the same result might before or oftener have been produced. The land might often have been wrongly worked, and when, at last rightly cultivated, results hitherto not realized, might have been attained. There are favored spots in all localities, and it can scarcely be assumed, that what extraordinary care and cultivation has done there, is a pattern or precedent, which all can imitate or follow.

Mr. W. contended for the superiority of practical farming over every other; and in alluding to the best modes of culture, processes of plowing, varieties of tillage, differences of breeds of cattle, the farmer that learned from the earth itself, was always a scholar, always a learner, and at the very best of agricultural schools.

Mr. J. B. Howard believed, from what he had seen carried out in practice, that a man might be surrounded even with the elegancies of life, and yet by the aid of agricultural and scientific knowledge, might, as in an instance which he cited, be a pattern of good, practical, money-making farming. Such instances were every year becoming more frequent.

Messrs. Taylor and Sotham continued the discussion; and at its close, the subject of *Manures* was fixed upon as the theme of the evening, after Mr. Burchard's lecture on the agriculture of Europe.

Potato Disease.

In the course of Mr. Williams' remarks, vindicating the extent of real knowledge to be derived from practical observation, he spoke of this extraordinary calamity which had befallen an article of food so necessary, so useful. He thought, and gave his reasons, at some length, and with minuteness of detail, that it originated and attacked the stalks in a growing condition. He had illustrated and tried the truth of this theory by a series of experiments, and was confirmed in his judgment by their results.

Mr. Mack gave a very interesting sketch of his experiments, continued through a period of several years, in attempting to ascertain the cause and cure of the disease. His crop had been more or less troubled with it; sometimes with more severity than others. He had found nothing so effectual as a compost of an equal amount of lime and salt and ashes. By using this, he had preserved, and he thought, secured the potato from ultimate injury.

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Mr. Cheever had read much; examined much; experimented much on this subject, and all his investigations had only confirmed him, that this terible disease was one of those inscrutable dispensations of Providence, sent in its wisdom; sent for its own mysterious uses; and its causes are yet hid from the mind of man. We only know that it exists. It had been supposed to show itself only in this soil or in that, and yet where one person has proved to his own satisfaction, that it was only in this combination of circumstances that it was evinced, it has shown itself in its direct opposite. It was like the cholera, which came and went, no man knew why or whither, but its dreadful work all saw. It passed over in its destruction, going as it came. He had suffered very little in his own experience, but had seen its effects, and had seen its varied phases, its eccentric features, so much so as to establish to his belief, the truth, that the potato disease was a calamity, with no known cause. All Europe had endeavored to investigate the origin of it. It had been discoursed upon, experimented upon by scientific men abroad, to a greater degree than any other recent subject, and yet the result of all these elaborate and scientific researches had been to establish the truth, that the real causes were hid in the mysteries of a Providence that has motives unknown to men.

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AMERICAN INSTITUTE.

THE REPORT OF THE AMERICAN INSTITUTE FOR THE YEAR 1846.

The Trustees are gratified to be able to state, that the general operations of the Institute for the year, both in agriculture and the arts, have been crowned with signal success.

In its regular progress the most beneficent effects have been felt and acknowledged by numerous correspondents associated and individual; and by the press generally in every part of the country. The plan of carrying out the objects of the Legislature, as described in the last report, has been pursued, to which reference is made. This will supersede the necessity of making remarks at this time.

As the receipts are, in a degree, a true index of successful operation, the first reference will be to the accounts of the year. In the accounts of disbursements in promoting industry and improvement in the departments of agriculture and the arts, it should be borne in mind that our whole revenue, with the exception of the State bounty of $950, and the Van Schaick donation of $1,000, has been derived from membership, added to the trifle of twenty-five cents for each grown person, and twelve and a half cents for children admitted to the fair. This presents an example of economy, industry, liberality and devotion to the public good, that challenges a comparison with any institution in this or any other country. If mercenary motives had prevailed, there would have been no free library! no free lectures! no farmers' club, with even members paying nothing! no free repository where the ingenious inventor could show the world the fruit of his genius; all demanding expenditures every day of the year. Contributions would have been levied on all, and expended on fat offices.

In order that the benefits of the Annual Fair might be made available to the great public, and a knowledge of improvements diffused, delegates were invited from societies, and also citizens far and

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wide. Men in office, distinguished individuals, literary, scientific, &c., so that with the non paying, corresponding, and regular members, exhibitors and their families, embracing four-fifths as is estimated of all who entered the fair, were on the free list.

The following account embraces the financial affairs of the Institute for the year. (The general statement is selected from the account of receipts and expenditures.)

Receipts.

To cash received from January 20, 1846, to January 20, 1847,	$16,196 50
" Comptroller State of New-York,	950 00
	$17,155
Balance on hand at the date of the last report, February 1, 1846,	6,511 74
	$23,658 24

Expenditures.

By disbursements, claims against the 17th Annual Fair, 1844,	$30 00	
" balance claims, 18th Fair, 1845,	175 54	
" expenses 19th Fair, 1846,	9,860 14	
" " Repository and Library	4,343 34	
		$14,409 02
Balance on hand (of which $5,000 has been invested in the stocks of the city of New-York at six per cent interest,)		$9,249 22

Although the means of promoting agriculture by the Institute have been well adapted for the purpose, by Farmers' Clubs drawing practical truths and facts from men of experience and publishing them to the world; by enquiries made of numerous correspondents in various localites; by the distribution of seeds, plants, grafts and cuttings; by the prompt supply of the best publications in Europe and America, in various languages, placing them in the reach of all; by a daily exhibition of many of the machines and implements employed in agriculture and horticulture; by one great Annual Fair, or Exhibition of all the improved instruments used either on the

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farm, or in the garden; with the finest fruit, flowers, and vegetables, culled from an immense area of country, many of them cultivated with unwearied industry and care, stimulated by the promised premium; and by cattle shows and plowing and spading exhibitions; still the Trustees are impresed that something essential after all, is wanting. And in their opinion nothing essential to the advancement of this paramount interest should be withheld. The farming interest embraces four-fifths of the whole people of the United States, whose votes must determine the fate of our Republic, the security of the lives, liberties, and property of the present generation and the myriads that will succeed depends upon them.

No effort therefore should be spared to raise the moral and intellectual character of the farmer. Civilization and agriculture advance *pari passu* with improvements from the savage state to the highest civilization. Agriculture civilizes and christianizes the savage. The minister of agriculture and commerce of France, says, "able overseers and experimental cultivators must go forth and give examples justified by experiments, conveying knowledge to all quarters and reaching the youth." How shall agriculture, both an art and a science, be taught in America, but in schools? and how effectually taught but by experience on the land, and with instruments suited to the purpose? Youths must be instructed and trained and then they will go forth in all directions qualified, practical cultivators. Like apprentices to the mechanic branches who leave their masters, instructed and are entitled then to have *full wages, or be themselves masters at once.*

There is not a single well established school with suitable professors, grounds, apparatus, instruments of husbandry, breeds of animals and requisites for scientific and experimental teaching, in all the wide domains of our State. Millions on millions are expended on education, reaching all classes except the farmer. Knowing his numerical strength, do those who rule fear to add the power of knowledge? Would a small appropriation by our Legislature to ensure a trial, afford a dangerous precedent? More than fifty years ago Gen. Washington recommended the application of the national purse for the encouragement of agriculture, and although there was a universal assent, not a dollar under any legislative act has been directly applied to this day. The trustees most respectfully invoke the influence of the State Society for the establishment of one such school in or near the city of New-York, under the charge and care of the American Institute.

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Statement of premiums awarded in the agricultural department for the year 1846:

Gold Medals,	6
Silver Cups,	57
Silver Medals,	50
Cash,	110
Diplomas,	21
Vols. of Books,	137

The trustees feel authorized in saying that the report of the Institute for 1846, contains more valuable information than is to be found any where condensed, on the subject of agriculture especially; for which the Institute is indebted to the united contributions of many practical and scientific agriculturists. The immense labors of the chemists of the world in reference to agricultural chemistry, will be here found, brought to an intelligible and practical result, so far as those labors have up to this time been useful. What is here contained relating to the knowledge of soils and to the making and application of every kind of manure, is of great value; containing much solid instruction capable of being immediately applied by almost every farmer for the great benefit of his land, and increase of his crops.

The following is an extract from a letter of Joseph Cowdin, Esq., the Consul of the United States at Glasgow, Scotland, written in the spring of 1846, in relation to the introduction of our methods of cooking Indian corn, which he has zealously performed agreeably to the request of the Institute, of which he is, and has long been an active and intelligent member. This is but one instance of the effort and extent of the exertions of the Institute.

The efforts of Mr. Cowdin have, no doubt, done much to remove the prejudice which in Europe prevailed against Indian corn, on account of their ignorance of the proper methods of cooking it. The consequence of which is, increased demand and price abroad. A communication on Indian corn, with the best modes of preparing it for use, will be found annexed. We forbear in this report going into particulars. The appended papers are full of facts of momentous bearing, which for want of time we leave to the good sense of the reader who will draw his own inferences.

"I am and have for some time been devoting my leisure time in endeavoring to introduce into this community the great universal

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staple of America, 'Indian corn,' about which the people here know nothing, and I am pleased to say, have succeeded in removing the deep rooted prejudice which existed, by frequent exhibitions of corn bread in every variety of form. It may now be said to be fairly and permanently introduced into the charitable institutions and prisons of this city, which will give it a character and confidence throughout the United Kingdom of Great Britain and consequently throughout the old world, which will open new markets for this great and valuable staple. I rejoice in this, as it will benefit that noble and honorable class of citizens of our beloved country, the farmers, and by no possibility injure any branch of industry.

"The South have their great and valuable staple of the manufacturer, Cotton; but for capability of production, this is restricted to latitude and longitude; not so with corn, it may be raised throughout the length and breadth of our land with great facility and comparative trifling expense."

In conclusion is submitted a statement relative, to the quantity of Indian corn raised in the United States, the value of the same, and the amount exported, furnished us by Mr. Edwin Williams.

According to the United States Census, of 1840, and the result of Professor Tucker's inquiries as to the prices in different parts of the country, the quantity of Indian corn raised in the United States in 1839, and the value of the same, was as follows:

	Bushels.	*Value.*
New England States, ----------	6,992,909	$4,794,893
Middle States, ----------	39,946,213	23,356,515
Southern States,----------	94,998,255	44,994,506
South Western States,----------	129,741,093	38,259,033
North Western States,----------	105,853,405	21,186,681
Total United States,------	377,531,875	$132,591,628

The average value for the United States, according to this statement, is about thirty-five cents per bushel.

The blades or stalks of Indian corn, as is well known, form an excellent fodder for horses and cattle; and which, estimating twenty pounds for every bushel of grain, amounts to 3,775,000 tons, worth by Professor Tucker's estimate, $37,750,000.

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Thus the value of the crop of Indian corn in the United States in 1839, may be stated to have exceeded one hundred and seventy millions of dollars, an amount greatly exceeding in value that of any other crop raised in this country. The Secretary of the Treasury estimates the total value of the crop of cotton grown in the United States, in 1846, on the 1st of December, 1846, at $73,150,000, and that of Indian corn at $314,871,826.

The crop of maize, for 1845, was estimated by the Commissioner of Patents in his annual report, to have amounted to 417,899,000 bushels, and on that basis it may be assumed that the crop of last year, 1846, was at least 425 millions of bushels. This quantity at an average value of fifty cents per bushel would amount to $212,500,000. This enhanced value it seems justifiable to assume in the present estimate, taking into consideration the prices of Indian corn as well as provisions, (which are in some respects the product of this grain,) in the principal marts of the United States since the last harvest.

I am induced to believe that at least one-fourth part of the crop of Indian corn raised in the United States, is sold by the farmers to non producers, for domestic and foreign consumption, leaving three-fourths of the crop, for the use of the farmers themselves. Estimating one-fourth of last year's crop at one hundred millions of bushels, and sixty cents per bushel as the average price for the whole United States, or for all the different markets in which it is sold by the farmers, it results that the amount of sales of Indian corn by them to purchasers of all kinds, is sixty millions of dollars, being twenty-five millions of dollars more than the same crop would have brought in 1840.

It is difficult to estimate the proportion of the crop which has been and will be exported to foreign countries. Previous to the year ending June 30, 1846, the quantity of Indian corn and meal exported did not average a million and a half of bushels annually. The actual quantity of each exported for the four years and nine months ending June 30, 1845, was as follows:

Indian corn,----------	3,474,109 bushels.
Indian meal,----------	1,132,749 barrels.

The total *value* for the year ending June 30, 1846, (the *quantity* not being yet given,) compared with the previous year, shows a large increase, as follows:

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Exports.	1846.	1845.
Indian corn,	$1,186,663	$411,741
Indian meal,	945,081	641,552
Total,	$2,131,744	$1,053,293

Increase for 1846, $1,078,451, equal probably to about two millions of bushels of Indian corn and meal, and making the total quantity exported in that year, about four millions of bushels, including both corn and meal.

If we estimate the surplus of Indian corn which we can spare for export to foreign countries at four per cent on the crop of last year, which exports however are liable to be checked by the scarcity of vessels to transport the grain and the high prices of freight, we have seventeen millions of bushels of maize for export, or taking less than two-thirds of this quantity, we may ship to Europe, and elsewhere, twelve millions of bushels of maize and Indian meal, which at eighty cents as the average value amounts to $9,600,000 The value of the same exported in the year ending September 30 1840 was as follows:

Indian corn,	$338,333
Indian meal,	705,183
Total of both,	$1,043,516

The exports for that year were about the annual average in value for a series of years. It is thus shown that we may calculate on an actual gain to the country from the exports of Indian corn and meal for the current year, over the average of former years, (when this valuable grain attracted but little attention in Great Britain and Ireland, as the food of man,) of at least eight millions of dollars.

I cannot omit the present opportunity to award the credit, which within my own knowledge, is due to Doctor J. S. Bartlett, editor of the Albion of this city, and to J. S. Cowdin, Esq., U. S. Consul at Glasgow, for their efficient exertions in calling attention to the importance of introducing Indian corn as a cheap food for the British nation. The services of Mr. Cowdin should, as I have no doubt they will, be fully set forth by the Institute, and Doctor Bartlett, in a published letter addressed to Lord Ashburton, when in 1842 he visited

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the United States as a special Minister to this country, brought forward important facts and arguments on the proposed introduction of maize to supply the deficiencies of the crops of Great Britain and Ireland, without reference to the failure of the potato crop, a circumstance which has since brought the subject home to all classes of British subjects.

All which is respectfully submitted on behalf of the trustees.

SHEPHERD KNAPP, *Vice Prest.*

H. MEIGS, *Recording Secretary.*

T. B. WAKEMAN, *Corresponding Secretary.*

American Institute, March 9th, 1847.

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REPORT

Of the special committee of the American Institute, upon the farming animals offered for premiums at the nineteenth Annual Fair.

The committee would premise, that by the direction of the *Board of Agriculture*, it was found to be expedient and necessary, to draw up instructions for the guidance of the various committees in the awarding of premiums, inasmuch, as hitherto it has been found that animals of inferior value, as regards *blood* or *pedigree*, had often had medals and plate bestowed upon their owners contrary to propriety; it was therefore decided, that rules hereafter should be prescribed, and the following directions were submitted to the gentlemen appointed as judges in conformity to the above intent, viz:

Instructions to judges of stock at the Annual Fairs of the American Institute. Adopted September 29, 1846.

The Board of Agriculture would respectfully address the committees appointed for the awarding of premiums upon the various breeds of animals which may be submitted for inspection, upon the necessity of adopting certain fixed *principles* and *rules* in deciding upon the merits of each description of Stock.

Hitherto, premiums have been awarded in many cases, when the animals were below mediocrity, and without due attention to the purity of blood or of origin; an error which, for the future, the Institute proposes to correct. It is therefore decided, that in all cases where an animal may not be of the first grade as a breeder, as regards form, size, blood, &c., no standing *medal* or *plate* shall be awarded: but, where a case should arise of great merit in a part blood animal, a diploma setting forth facts may not be withheld, and should be granted.

As regards fixed principles and rules, the board of Agriculture lay down the following, viz:

First. All experience shows that "*like begets like.*"

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Second. That from a "mixed blood animal" no reliance can be placed in procreating a *distinctive breed.*

These principles the board of agriculture request of the committee to carry out in all cases.

Relative to the *horse*, of all animals, these rules must be applied; as, from experience, the blood horse, or the horse of Arab origin, is that cast of horse from which all others have descended, and, to continue the race in perfection, the blood must remain *pure.*

From the full blood horse is derived beauty, speed, wind, strength and endurance, and to preserve these qualities, it is necessary to be careful as regards pedigree, and not to pass one about which there is any doubt, as is practiced in Arabia from all time to the present day.

A full blood horse, crossed upon a half bred mare, produces the famous chargers and hunters of England. A half blood is useful for the gears and all quick work; but the heavy, large, bulky, slow, dray horse of Flanders and England are found to be *unprofitable* in this country for every purpose. Our famous trotters are generally three parts thorough bred, and they distance in speed and stoutness all horses of any country.

The attention of the committee is called to another breed of horses, of a unique description, and unknown out of this country—the Canadian horse. This horse has, by chance, become almost a distinctive race, and remarkable in having two gaits—the trot and the pace, united often in the same animal, and of great swiftness. His blood has been derived from the crossing of Norman and English blood horses upon Narraganset mares; consequently you see commingled in the Canadian, the coat, hoof, speed and wind of the blood horse, and of the Narraganset; the broad chest, short back, large bone, and full, plump muscles of the Norman.

From the Narraganset he takes oftentimes, his high spirit, and the Narraganset was derived from the Andalusian horse, (of Moorish origin,) transported by Spain to America.

Thus the committee have the rule above laid down exemplified in the Canadian horse, and the utmost care should be observed in authenticating his pedigree, and medals or plate should be awarded him.

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Relative to cattle, it is thought to be advisable to grant premiums to races of pure blood, viz:

First. To the English short horned Bakewell breed.

Second. To the Devonshire pure blood.

These are races of animals, proved to be excellent for various purposes in this country, either kept pure in blood, or in crossing with native cattle.

Third. To native cattle of well authenticated breeds, as excelling for the yoke, the dairy, or for beef.

In all cases, proof of pedigree and statements of breeding should be required before granting premiums.

Fourth. For Herefordshire, Ayrshire, and all other cattle, a premium will be left discretionary with the committee.

Of *Sheep.*—The varieties are many, and should be carefully attended to as regards pedigree, form, size, and fineness of wool. The latter now becoming a staple commodity of our country, should in an especial manner be attended to. Samples should be taken by the committee and carefully ticketed and reported on, to be lodged at the Institute for general information. A detail of the names of the exhibitors, and their proofs of breeding, should be placed in the hands of the committee to entitle to a premium.

Swine.—Hogs are so valuable for their flesh fat and oil, not only for domestic use, but as staple commodities, that the Institute think the committee should be very particular in inquiring relative to the most prolific and valuable breeds.

It has been usual for persons at agricultural meetings, to make themselves witty and merry on making up their reports on swine, most ridiculous in conception and abortive in declamation. That an animal so valuable, and so necessary in producing staple commodities for a country should be subject to ridicule, seems to have arisen from a false taste.

In this country, swine have been well reared, and for a long series of years fattened to a greater weight than known in other countries; and the flesh too, as pork, better than any other, from the fact of being fattened with Indian corn, the best food known for feeding the

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animal. The proof is in our late commerce with England, showing that prejudice has fled, and that American pork and hams are really to be tolerated, inasmuch as they have been found to be more fat, and as the English call it, "better fed" than their own Irish or English pork.

It is left for the committee to investigate and make known what breeds are found to be best, whether from Yankee land, the Middle, Western or Southern States, for the profit of the farmer, as there is no longer need to call on Europe or any other country for amelioration of our breeds of swine.

These instructions were not acted on by the committees to the extent intended by the agricultural board, as returns only of premiums were sent in, without giving reasons for granting the various awards, or on whom conferred, as was the intent and wish of the agricultural board; it therefore becomes necessary on the part of the special committee, to give descriptions of the animals, as well as to whom they belonged, not only in justice to them, but to the community at large. We commence with the useful and fanciful animal, the

Horse.

There were many varieties of the horse on the ground which gave high interest to the scene. The *first premium* of the silver cup was awarded to Mr. Robert L. Stevens, of Hoboken, N. J., for his horse Tornado, by American Eclipse, dam, Polly Hopkins, by Sir Archy; a thorough bred stallion of great beauty, possessing most of the requisites sought for, and required in the blood horse; thus much is said of this horse, but something more is due to Mr. Stevens, the owner of him, inasmuch as that gentleman to carry out an object of improvement, sent the dam, Polly Hopkins, to England, (where Tornado was foaled,) in order to meet the best stallion in that country, and she returned per packet, with her foal by her side. This fact is worthy of record, and shows that we have men in our community, who without regard to expense, when improvement is the object, will step forth for the public *good*, and we trust Mr. Stevens will excuse us for having taken the liberty of mentioning his name.

The *second premium*, the silver medal, was granted to Mr. Absalom D. Nelson, of Greenburgh, Westchester county, for his blood horse, Belzoni, by Stafford, (imported,) dam, by American Eclipse, a blood bay, showing high breeding and strongly of the character of the Arabian horse.

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Mr. George M. Patchen, of Brooklyn, was awarded a silver cup for his young trotting stallion, Cassius M. Clay, a remarkably fleet horse as a trotter; of a deep bay color, large size, and showing strongly traces of high breeding from various crosses of the blood horse, and will probably prove valuable as a stock getter.

The silver medal was also awarded to Mr. S. Freeman, of New-Jersey, for his fine horse, Napoleon. This animal from his fine size and general appearance of blood and good points was thought to be entitled to a premium by the committee.

Major William Jones, of Oyster Bay, obtained a silver cup for his brood mare; and a diploma for the colt by her side, she being the best brood mare and colt on the ground.

Mr. John H. Coster, likewise was awarded the silver medal for his brood mare, Gulnare, by Eclipse; dam, Sportsmistress, by Hickory.

The silver medal was gained by Mr. Samuel Hart, of Brooklyn, for a brood mare, useful for all farming purposes; as also a silver cup by Joseph Blakeslee, of Watertown, Conn., for a brood mare of the same description.

To Mr. Jesse Hobley, of Williamsburgh, a silver cup was awarded for the best colt on the ground of two years of age. A silver cup was presented to Mr. Bernardus Hendrickson, for his yearling colt diamond, by Canada Chief, out of a Mambrino mare.

Silver cups were awarded to Mr. Charles Bathgate, and Mr. Thomas Bell of Westchester, for their fine farm horses, respectively presented at the fair. The silver cup was given to Mr. Willard S. Reed for a fine pair of matched horses. Mr. J. Fisher Sheafe, of New Hamburg had the silver medal for a pair of fine geldings (matched horses). There were many other valuable horses and brood mares on the ground, among which, many were awarded diplomas, as being of excellence, and entitled to more than a passing notice.

Of these we cannot but mention in some detail the three following stallions, which from some inadvertence did not come under the examination of the committee, a circumstance much to be regretted, as they are most undoubtedly entitled to medals or cups, and it is to be hoped, that hereafter, no such omission may take place at our fairs.

The first stallion we shall name, was the one owned by Mr. James Sanders, Chatham Square, named Young Alexander, by Alexander,

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(imported,) got by Smolensko, out of Wire, by Rubens—the best blood in England. His dam, by Sir Richard, Grey Highlander, Expedition; as regards blood, unexceptionable. As a horse, Young Alexander is remarkable; a blood bay, very black legs, mane and tail, without any white marks; sixteen and a half hands high; of fine presence, and high form at all points; with the quick nervous action of a small horse, and of good temper, although of high spirit. It is to be hoped that this horse may appear on the ground the next year, as also his stock, that justice may be awarded him, as the special committee have no hesitation in pronouncing him to be worthy of contending for the cup.

In much the same light, stand the stallions presented for competition as mixed grade horses, owned by Messrs. John Wire and Henry D. Waid, of Middletown, Conn.; both of them of the mixed blood of American Eclipse, Henry, Messenger, Magnum Bonum, &c.; more than sixteen hands high, of great bone, muscle, and sinew, as well as of fine action. They were grand parade horses or chargers. The one was called Henry by Henry, the other Henry Eclipse, being out of an Eclipse mare. These animals must prove very valuable for stock horses, from their high breeding, great size, and general good properties, and it is to be regretted that either they were not on the ground when the committee acted, or were enclosed in their stables out of view.

To conclude, as regards the show of horses, there was every reason to be pleased with the fine collection of these animals, and the Institute, we are persuaded, will be satisfied their exertions and awards are duly appreciated by the public.

Cattle.

The cattle at the fair, were as hitherto, of many varieties, and each distinctive breed of much excellence, and it was highly satisfactory to witness the general emulation which existed among the breeders of them. It may not be presumptuous to remark, and it admits not of a doubt in the mind of this committee, that the inducements held out by the Institute of the award of medals, plate and diplomas, (setting forth facts worthy of record,) have caused more attention to be paid by our farmers to the improvement of their stock generally, as while contending for honest fame, their property might become enhanced in value. We have to record the names of many gentlemen who have given aid to the intent of the Institute, by personal exertions as well as by their wealth, in importing and improv-

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ing the various breeds of farming stock; and we trust they may not be offended by the liberty taken, in making mention of them. We commence by noticing the animals brought upon the ground by Mr. Roswell L. Colt, of Paterson, N. J., all of pure blood, and of the following breeds, viz:

Devonshire.—A breed noted for their uniform beautiful red color, their compact smooth form, smallness of bone, aptness to fatten, excellent beef, rich milk, and general good properties for the dairy. As oxen this breed has proved to be valuable, being spirited and quick walkers, at the same time standing well the heat of American summers. A cross upon the native stock is strongly recommended for all purposes.

Ayrshire.—Of this useful breed of cattle Mr. Colt exhibited those of the improved sort, being larger than the old black cattle of Scotland, and partaking evidently of improved breeds introduced into that country from England. The bull was a compact, well formed, short legged animal of a black and white color, flaked equally, and did not vary materially from many of our native cattle; he was however thought to be worthy a premium of plate, which was awarded.

Alderney.—The specimens of this unique race of cattle were of pure blood, as shown by their peculiar yellow hair, small upright white horns tipped with black, and small deer like legs, delicate head, mild large eye, smallness of size, and well formed wide spread udder. This breed is famed for the richness of their milk, and high flavor of butter. It is well adapted for the use of people residing in cities; taking up little room, and living upon a small amount of food. For the dairy at large, the Alderneys may be useful in crossing with the view of improving the quality of milk; they are best suited however for cities as above stated, or for the poor man, who can only provide for one cow.

As usual, Dr. Pool, of New Brunswick, Thomas Addis Emmett, of New-York; Mr. Geo. Vail, of Troy, and others, carried off silver medals and cups, for their improved short horned Durham cattle, in which there was no falling off. Mr. Thomas Bell, and Mr. Lewis G. Morris, of Morrisania, also took the silver medal and a silver cup for their improved Durham bull and a calf by him of rare excellence.

It is with much satisfaction the committee has to report in favor of the native cattle, presented by many spirited breeders, among whom

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were conspicuous, Mr. Lewis G. Morris, of Morrisania, Mr. William Whitney, of Morristown, N. J., Mr. James Bathgate, of Fordham, Westchester county, Mr. James Weeden, of Newtown, Mr. W. Jarvis, of Brooklyn, Mr. Le Grand Bradley, of Hamden, Conn., Mr. Josiah Purdy, of Rye, Mr. Selah Strong, of Milford, Conn., Mr. Joseph S. French, Mr. Blakeslee, of Watertown, Conn.; all of whom bore off silver medals and cups. We are gratified to say, hitherto native cattle at our fairs, have not been thus entitled to notice.

This improvement of our native stock has, no doubt, arisen in this vicinity by the competition which has taken place, and the emulation excited. It was a matter of great doubt among the farmers on the ground, whether the native cattle were not the very best at the fair; and especially so, on viewing the stock of Mr. Lewis G. Morris, and Mr. James Bathgate, of Westchester, which fairly vied if not excelled the imported short horns, Devonshires, and others. These native cattle spring from the old American varieties, crossed with Durhams, Devonshires, Holstien (imported,) Ayrshires, &c. &c; all judiciously united, and valuable for all purposes, and especially so for beef and the dairy.

Of Herefordshire cattle, none were presented. It was a matter of regret that the noted herd of this breed of Messrs. Corning and Sotham of Albany, were not brought forward, as usual; as well as the short horned Durhams of Mr. Prentice of the same place. It is presumed they would have borne off prizes.

Sheep.

There was a good display, comprising Merinos, Southdown, Lincolnshire, Leicestershire and of common herds. Prizes were awarded to Mr. Blakeslee of Watertown Connecticut, Mr. Whitlock of the same place, Mr. Bathgate and Mr. Thomas Bell of Westchester, Mr. Hallock, of Ulster county, Mr. Florence of Mamaroneck, Mr. Robert Bolton, jr., of East Chester; Mr. John Brewster, of New-Jersey; as also, the Silver Cup, to Mr. Charles Blackbourn, of Bedford, L. I., for his remarkably fine Lincolnshire sheep. This gentleman, as a constant exhibitor of this valuable and noted breed of sheep is particularly noticed, inasmuch, as there appears to be improvement in his flock from year to year, not only in fleece but in form and size, which shows that by good judgment and management, foreign breeds of sheep may be kept up and even made better than those originally imported from other countries. Mr. Blackbourn, himself a farmer from Lincolnshire, confirms by his experience, the above improvement upon the original breed.

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Among the specimens of sheep, was a native buck of mixed merino breed, having a fleece upon him of five years growth, twenty-four inches in length, fine in quality, and was judged to weigh twenty-five pounds. This fact shows that the merino breed of sheep will furnish wool for worsted of any length necessary, and of a fineness unequaled by any other variety of sheep. Samples of the wool can be examined at the Institute.

The exhibition of swine and poultry of various breeds was extensive and valuable; consequently many prizes were awarded.

In behalf of the special committee on stock.

CHARLES HENRY HALL, *Chairman.*

American Institute, October, 1846.

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COMMUNICATIONS.

On the culture of Grapes and manufacture of domestic Wine, by H. Longworth, Cincinnati.

I have selected for the cultivation of the grape for wine, hills on the Ohio river, or within a few miles of the river, planting the vines on the tops and the sides of the hills, without particular regard to the exposure. The tops and sides of our steepest hills are rich, and little or no stone near the surface. The north sides of our hills are the richest, and as our seasons are long and warm, I consider the north sides equally favorable to the cultivation of the grape, as the other points of the compass. Where the sides of the hills are so steep as to occasion washing of the soil, I trench the ground from 18 inches to two feet deep, and lay it off in benches, usually sodding the benches, but where in trenching, stones are thrown up I give them the preference. The cost of benching is about $50 per acre done in the best manner. The depth to which I trench, depends on the depth of the soil. The substratum is usually clay, and I trench deep enough to bring from four to six inches of the poor soil on the surface, wishing to keep the roots that far below the surface. When I first commenced my vineyards, to meet the views of my tenants, who must do it as they were accustomed to do it in Germany, the ground was trenched three feet deep, even where the good soil was less than a foot in depth, and the stiff clay thrown on the top. The consequence was, the vines did not flourish, for the roots are generally inclined to keep near the surface, and never reached to the good soil, two feet below the surface. Where the ground is not so steep as to wash, deep plowing is all I deem necessary.

On the benches on the side hills, I usually place the rows from four to four and a half feet apart. I leave a distance of three and a half or four feet between the plants, and tie them to the stakes, generally of locust, from five to six feet high. On the benches we never use the plow. On level ground, I should plant the rows five or six feet apart, and leave four and a half feet between the plants. Our soil in general, requires little or no manure. We use occasionally, all kinds of manure, but always have it well rotted before we apply it.

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In planting cuttings, I plant two in each hill, placing them within two or three inches of each other at the top, and widely separated at the bottom, to enable me to remove one of them without disturbing the roots of the other, should both grow. If the growth has not been sufficient to produce well ripened wood, I cover it with earth the first winter. Early in the spring I head down the plant to two or three eyes, as soon as I discover which is the strongest shoot, break the others off, and permit one only to grow. I break off three or four of the first lateral branches, and after that give the plants no attention till the spring following when I again head them down to four eyes, and permit two of the strongest to grow, taking off the lateral branches to such point as I expect to prune to the next spring. The spring following, (the third year,) I expect a small crop of fruit, and prune the strongest branch from two to four feet long, according to the growth of the plant, for bearing, and prune the other shoot, leaving five eyes, three of the strongest of which I allow to grow, breaking off lateral shoots as usual, and the following spring cut out the bearing wood of the preceding season, always pursuing the cane pruning, and leaving none of the two year old wood; and thereby always having all my shoots within a foot or eighteen inches of the ground. In breaking off the lateral shoots, it must not be done till the wood begins to ripen; for if done too soon, it forces out the fruit buds of the next season, which brings a crop that is usually killed by the frost of the next fall, before fully ripe. I have frequently had the tops of my vines broken off by a heavy wind, and numerous fruit buds of the next season forced out; and when the fall was favorable, which is often the case on the Ohio, had a fine show of grapes fully ripe the last of October.

As a matter of curiosity, I have on the same vine, had fruit not only of the current year, but from the buds of four succeeding years. Say in May, 1847, as soon as the plant is in blossom, I cut off the extremity of the shoot, and force out the fruit bud, designed for fruit in 1848. As soon as the fruit bud of 1848 is in blossom, I again cut off its extremity, and force out the bud designed for fruit in 1849, and so continue to clip the extremities, till the growing season is over. In a grape house properly heated, the fruit of the different years may all be brought to maturity. My Germans are averse to pruning till spring, as such was the practice in Germany. This often interferes with spring work. I would recommend pruning in the fall, as soon as the leaves have fallen, and at the same time plant out cuttings. Where planted in the fall, I should plant so as to leave the upper bud even with the surface, and throw a little soil

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over it, and remove in the spring, as soon as the severe frost is over.

We gather our grapes as soon as they are fully ripe. In many parts of Europe they are suffered to hang on the vines till past maturity. This adds to the saccharine principle, but I find it injurious to the aroma and flavor of the wine. I cultivate none but red or black grapes. If red wine be the object, we mash the grapes, and have a partial fermentation before pressing, to bring out the coloring matter, which is contained in the skin. If a light colored wine be the object, we mash the grapes, and press them out as soon as gathered. We carefully pick from the bunches all rotten and green fruit. As soon as the must is in the cask I move it to the wine room, which is sometimes in the cellar, and at other times above ground. In neither case has it ever run into the acetous fermentation.

We formerly added sugar to all our must before fermentation. To the Schuylkill Muscadell, from 12 to 16 oz.; to the Catawba, from 6 to 10 oz. to the gallon; being governed by the quantity of saccharine matter in the must, and also the quantity of leaven. Of late years, if the grapes are ripe, we use no sugar to the Catawba grape, and never add spirit in making wine from other grapes. Of the character of Madeira or Port, we generally use sugar before fermentation, and add from five to eight per cent of brandy after the fermentation is over, to make it resemble those wines to which brandy is always added. The Isabella makes a very indifferent wine, unless from 24 to 32 oz. of sugar is added to the gallon of must, according to the maturity of the fruit, when it makes a superior sweet wine, equal to the best imported.

The reports of some of our Horticultural Societies, and publications of some of our vine dressers, speak of 500 gallons of wine to the acre, as an average yield. There is more of poetry than truth in these statements. After 30 years of cultivation, I deem 200 gallons to the acre a full average crop. The most I have known grown on two acres was 1300 gallons from the Catawba grape. This I consider our most valuable grape for wine, and manufactured with care and left till of proper age, will rival the best dry Hock. After two years trial, I am satisfied it will also make a superior sparkling champagne, and am now erecting a vault and building to have it manufactured extensively. From the Isabella grape I one year made from 1-14 of an acre 105 gallons, being at the rate of 1470 gallons to the acre. This grape ripens unequally with us, and is very sub-

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ject to the rot. The Missouri bids fair to be valuable as a wine grape; and the Herbemont would be very valuable both for the table and wine if it were less subject to rot. I have tried the foreign grapes extensively for wine at great expense for many years, and have abandoned them as unfit for our climate. In the acclimation of plants I do not believe. The white, sweet water grape is not more hardy with me than it was 30 years since, and does not bear as well. I have tried them in all soils, and with all exposures.

I obtained 5,000 plants from Madeira, 10,000 from France; and one-half of them, consisting of twenty varieties of the most celebrated wine grapes from the mountains of Jura, in the extreme northern part of France, where the vine region ends; I also obtained them from the vicinity of Paris, Bordeaux, and from Germany. I went to the expense of trenching one hundred feet square on a side hill, placing a layer of stone and gravel at the bottom, with a drain to carry off the water, and put in a compost of rich soil and sand three feet deep, and planted on it a great variety of foreign wine grapes. All failed; and not a single plant is left in my vineyards. I would advise the cultivation of native grapes alone, and the raising of new varieties from their seed. It may be advisable to cross the Catawba with some of the best foreign wine grapes, and raise from the seed.

I have 24 vineyards, and about 67 acres of vineyard in bearing, and about 32 acres recently planted, or ready for planting in the spring. Last year there was a partial failure of the crop, but we made 300 barrels of wine, being 200 barrels less than we calculated on making before the rot commenced in the grapes. Of the cost and profit of cultivation, I am not fully competent to speak; for profit has not been my object, nor have I devoted that attention to my tenants, that a regard for profit would require. I commenced with the firm belief that the climate and soil in this region was admirably calculated for the cultivation of the grape, and manufacture of wine, and though I had little hope of succeeding in the cultivation of the foreign wine grapes, I determined to give them a fair trial, and resolved to collect native grapes from different parts of America, believing as the Hughes crab apple of Virginia, gave us better cider than any foreign apple, I might find a native grape capable of making a superior wine.

About 25 years since, I commenced settling Germans on my hilly ground, and setting off to each from 12 to 25 acres. They were generally very poor. There were no written contracts, but the under-

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standing was, I was to furnish all grape cuttings and fruit trees wanted. I paid for trenching and benching portions of the ground, and gave them such aid as was necessary at the outset. I was to have half the wine at the press, and half the amount of sales of the other fruit. All other articles raised on the place were for their own benefit. The grapes were generally neglected, as it took some years to bring them into bearing, whilst the potatoes and sourcrout yielded an immediate income. My first tenant instead of having a crop of grapes the third or fourth year, had his crop the ninth year, when his share yielded him $200. The tenth year, his wine yielded him about $800. So large a sum, and all in silver bewildered the old man's imagination. He made me his best bow, went into the interior, bought land, and began a vineyard on his own account. His latitude was too far north for the grape, and after six years absence the old man returned nearly pennyless, and began a new vineyard on four acres of ground, adjoining the old one, then and now under charge of one of his sons-in-law. He will next season make some wine; but to cheer the old man's spirits, we have enabled him occasionally to take his accustomed glass of wine, and sing his old song under the shade of his favorite tree.

Most of my tenants have occupied their present vineyards from 10 to 25 years, and are contented and happy, if not rich. One of them who works harder than any of the others, and keeps his family at work, and devotes most of his time to his vineyard, made from his wine last year, $1,400. But I would not recommend the cultivation of the grape for profit to persons who hire all and work none.

Our wines have always met a ready sale in the city, and bring from $1 to $1.50 per gallon. The grape culture is now spreading rapidly, and we must look out for a market abroad. The price will depend on the manufacturer. In the wine countries of Europe it is a standing proverb that, "a poor man cannot make good wine." The reason is obvious. He is compelled to sell his wine when new, and cannot devote the necessary attention, and wait till his wine is five or six years of age, before he sells it.

It is there also said, that all depends on soil, and exposure; and whilst the wine at one vineyard brings $12 per dozen, the wine of an adjoining vineyard will not command one quarter the sum. In this doctrine I place no reliance. With us, I find the quality chiefly depends on the care and attention of the manufacture. Wine requires much greater skill, and care in the manufacture, than is requi-

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site in making cheese and butter. What more simple than the making of butter, yet one tenant on a farm will make butter of a superior quality, whilst the butter made by another tenant on the same farm, with equal facilities, is scarcely fit for use, and will not command half the price of his brother tenant. In Europe a landlord often commences with selling his wine at $3 per dozen, and ends by selling it at $12 or more, as his reputation becomes established. A manufacturer who values the reputation of his vineyard, in unfavorable seasons sells his wine in the cask, without attaching his name to it at a low price.

The cultivation of the grape for wine in our country was attempted about 50 years since, by a company at Spring Hill, near Philadelphia. They tried foreign wine grapes, and found them unsuited to our climate. They found one grape only to stand the climate and bear well.

The idea of manufacturing wine from a native grape would in that day have been hooted at, and the manager wisely, if not honestly called it the Cape grape, though taken from the banks of the Schuylkill; leaving it to be inferred that the vine was from the Cape of Good Hope. The next attempt was by the Swiss emigrants, at Vevay, Indiana. They found the grape of Switzerland unsuited to our climate; and hearing of the Cape grape succeeding at Spring Hill procured it, and for many years cultivated it, making a hard rough, red wine, excellent for sangaree, but not relished as a table wine.

Their vineyards have gone down, and the Cape grape (Schuylkill Muscadell) is now but little cultivated. It is one of our surest bearers, and pressed as soon as gathered, and manufactured after the manner of Madeira and Tenneriffe wine, when at a proper age it greatly resembles them.

We are indebted to Major Adlam, of the District of Columbia, for the introduction of the Catawba, our best wine grape. He erred in making from it a sweet wine. The Major was compelled to cultivate it with a view to immediate profit, and injured the reputation of his wine, in seasons when the Catawba did not produce a full crop, by mixing with them the wild grapes of the woods in his vicinity. By the introduction of that grape he was a great benefactor to the nation, and the day is not distant when the banks of the Ohio will rival the banks of the Rhine, in the quality and quantity of

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the wine produced. Our German emigrants are the people who will accomplish it. Our hills suitable for wine are of little value for other cultivation. Give a German 10 acres of this land, and if he has a wife and children, he will live in great luxury. He will never want for his two greatest of all luxuries, wine and sourcrout. His children however small, not only aid him in the cultivation, but his wife during the summer and fall does the greater part of the labor in the vineyard. The poor vinedressers in Germany are seldom so rich as to own a horse, and therefore over estimate their value. Yet greatly as they value the acquisition of a broken down pony in this country, it does not lessen their estimation of the great value of their wives in the vineyards. A very honest Dutch tenant of mine, who was so unfortunate as to lose his wife, observed to me, "he might just as well have lost his horse."

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SOILING OF CATTLE.

By Henry A. Field, of New-York.

The soiling of cattle has been highly recommended by our Agricultural writers, and by many distinguished farmers who have employed the system advantageously.

During the last three years, I have kept my farm stock partially after this plan. I have seen many advantages result from it, but yet have become fully satisfied that soiling can be economically practiced only under favorable circumstances.

If land is valuable in consequence of its contiguity to a market, where a good price and ready cash can be obtained for its productions, especially milk, or if the grounds are laid out in lawns, covered with shrubbery, nurseries, young orchards, &c., then, if it is desirable to keep stock at all, it would be unquestionably best to soil them. So also it would be under almost any circumstances, desirable to soil or keep up working cattle and horses, for they are then always ready for the yoke or harness, without the trouble of going in the pastures for them; besides, it is much better to feed the animals that kind of food which would be more proper for them while at work than grass only. Again: much would depend upon the description of produce, that the farmer expects to obtain from his cattle. If he intends making butter, or cheese, then the soiling system would not answer. The only plan to obtain a good article of fine flavored butter or cheese, is to afford the cows an unrestrained range in a good pasture. I think there must be, and it is the opinion of others much better acquainted with the subject than myself, certain plants growing in the pasture, which give to butter and cheese their rich color and flavor, which the cows find when they range at large. At any rate, I never yet have seen fine colored butter made while cows were kept up on any feed; and I have fed grass, clover, green oats, rye, and corn, cabbages, turnips, potatoes, beets, &c. I intended, to-day to exhibit to the club a specimen of butter made from a

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cow fed with warm swill and hay. It was as white as lard, and almost as tasteless. A few days since, I was in the cellar of a country merchant, and saw there a number of specimens of butter from some of the best farmers of Dutchess county. Almost every parcel was of a white color. I am aware there are large quantities of fresh butter sold in the winter and spring that possess a good color, but a little experience in the art of coloring is only sufficient to give either cheese or butter any desired color. The greatest advantage to be derived from soiling cows is, the quantity of manure that can be obtained from them, and a regular and abundant supply of milk.*

According to the experiments of Mr. Pell, which he communicated to the State Agricultural Society, published by them in their Transactions, for 1844, it would appear, that to keep cows, except for their manure, would be attended with ruinous expenses. Five cows gave, each, under the most favorable circumstances, sixteen quarts of milk. Fourteen quarts of good milk are allowed for one pound of butter. I do not believe that sixteen quarts of milk, from soiling, would more than make a pound of butter; at any rate, a cow that would average one pound of good butter per day is a first rate cow. Estimating this butter at 1s 6d per pound, his five cows would yield 7s 6d per day. What would such an income do towards paying the expenses of the animals, buildings, land, seed, labor, &c. He made however, a large quantity of manure, but the bulk of this was straw, weeds, leaves, &c.

To make manure from stock, it is necessary that they should be either enclosed in a yard, or tied up. The only reason assigned why the manure does not give its full benefit in pasturage, is, that a great proportion of it evaporates. Those who soil their cattle, and turn them in a lot, therefore lose the most valuable substances in the manure. It is, no doubt, better to give the animals the benefit of a small enclosure for exercise, &c., but yet, if it is desirable to make manure, these advantages must be sacrificed. I have always found it was better to keep stock tied up constantly, than to suffer them to roam a part of the season, and then confine them at other periods; for they would always show its bad effects in their milking, and ap-

* It is believed that very many of our dairymen are in the habit of making butter in the winter, and from soiling also in the summer, which is of good flavor and rich color, without the admixture of coloring matter. A little attention to feed, it is believed, will obviate the white tasteless butter referred to.

B. P. J.

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petite for food. When animals are tied up constantly, but suffered to go to drink at stated intervals, they after a time, become accustomed to it, and do as well, as far as I have observed, as if turned out; especially when the pasturage was not regular, as it sometimes is in dry hot seasons. But yet this was only in reference to their condition and quality of saleable milk, not for the making of butter.

I would recommend that the ordinary crops of the farm, even such as clover or grass, should not be depended upon for soiling. The ground should be especially assigned for the purpose. It should be as near the animals as possible, to save labor, and put in the best condition for producing a succession of luxuriant crops. A dry or wet season will then never disappoint the farmer, for if the land is plowed thoroughly and deep, and highly manured, it will be so loose as to permit the roots to strike deep and obtain sufficient moisture, raised by capillary attraction from below, in case of a drought; or so porous as to permit the ready percolation of water in a wet season. All the crops for soiling should come in, in regular order, and not too much ground should be sown or planted at a time; so that the crops may be fed before they are too old and strong. It is often said that these crops are too watery, and that they scour the animals! They do so oftentimes, because the feed is changed suddenly; but after a time they become accustomed to it. Feeding a little dry meal, and giving the animals the privilege of licking clay, will soon check the disorder. Lime water is also very good for that purpose.

I believe that the following plan for raising crops for soiling, would be found to answer the desired object. Let a proportion of land be prepared by deep thorough tillage, and abundance of manure, and sown with rye. Thrice the quantity of seed should be used; and it should be sown about a fortnight earlier than usual. This rule affords the first cutting in the spring. A piece of clover should next be prepared by top-dressing and plaster, this would come after the rye. It could be cut until corn was ready, or as soon as the frost is out of the ground in the spring. Oats and field peas should be sown on rich well prepared ground. This crop will come in after clover, and I think, would be a good substitute for English tares. It was the most abundant crop I have ever raised on my farm. When the weather is sufficiently warm, corn should be sown broadcast. This will give an abundant supply of feed until late in the fall. I prefer sowing corn broadcast to drills. It is much less trouble, and the stalk is made more tender. I prefer too, to cut the corn when

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it is in full leaf, and not wait any longer. I have conversed with our largest dairy-men, who have partially soiled with corn for several years; they all unite in the opinion, that it is the best feed to give an abundant yield of milk which they use.

A very intelligent and observing farmer of Western New-York, informed us a short time since, that he had found sowing corn in drills for soiling, far preferable to sowing broad cast. He was enabled to raise a larger quantity per acre, and as he cultivated between the drills, all the weeds were entirely subdued, and his land was left in the best possible condition for the succeeding crop. He made his drills about three feet apart, so that the plow or cultivator could be used to advantage. It is desirable that more attention should be given to the cultivation of corn for feed, as it is believed nothing equal to it for the purpose can be raised at the same expense.

B. P. J.

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LIME AND ITS USES.

By R. L. Pell, of Pellham, Ulster county.

Lime is an important and an indispensable requisite in the growth of nearly, if not all cultivated plants and fruit trees; in fact, I have never noticed in any analysis made by analytical chemists recently, of various plants, one in which lime did not form a principal ingredient. It must therefore be considered an essential part of all vegetable substances, as a direct food. By chemists, it has been found that the ashes of the oat plant contain five per cent of lime. In two pounds of wheat, 12 grains have been found. In two pounds of rye more than 13 grains. In two pounds of barley, more than 24 grains; more than 33 grains in a given weight of oat straw; and 46 grains in the same weight of rye straw. It abounds in the wood of trees; the ashes of the oak contain 32 per cent; those of the poplar, 27 per cent; hazel, 8 per cent; mulberry 56, and the hornbeam, 26 per cent. The proportion of lime is found to vary with the composition of the soil on which the plants grow. Thus the ashes of the fir, growing upon a limestone hill, were found to contain 43 per cent, but the ashes of the leaves of another growing upon a granite soil, yielded only 29 per cent. I do not believe a soil can possibly be fit for agricultural purposes if entirely devoid of lime. Its action is to dissolve and render soluble all organic matters contained in the soil, and before such substances are made soluble, they cannot be elaborated by plants. It has probably been observed by all present, that the effects produced by an application of liquid manures to growing plants, was far more rapid than that obtained by any dry applications. When in England, in 1832, I observed that it was the uniform practice among farmers there, to draw upon their field dry manures, and compost liquid manures were not generally used; the liquids were generally absorbed by the straw and dry fodder of their barn yards.

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In Switzerland and Germany, I observed an entirely different mode of management; there the farmers who had any reputation as such, were supplied with cisterns, tanks, &c., into which all their straw, litter, droppings from the cattle, and refuse of every kind was daily raked; the tanks were then partially filled with water, and thus a large portion of the manure became liquid. After remaining for four weeks it was carried upon their fields in large hogsheads, on carts drawn by oxen generally, sometimes by horses. On some farms, I was informed that it was customary to clean their cattle and horse stalls but twice a week; the litter taken from them was thrown into the cisterns and washed. After all the particles of manure were removed, the straw was taken out and placed in a square pile to rot. The liquid was then immediately drawn upon their grass fields, and gardens. The results thus obtained were marvellous. I mention these facts to show that lime would be valuable, even if it did not form a part of nearly all cultivated plants; inasmuch as it renders dry substances soluble. Lime attracts moisture from the atmosphere; and thus it is of great importance to land during a drought. I tested its value in that respect, several years ago. In the month of July, I placed around several thousand apple trees, a peck of lime to each tree, and left it piled about the trunk until the month of November, during which time the drought was excessive, so much so, indeed, that the trees not limed turned yellow and lost their leaves very early in the fall; the fruit dropped from them prematurely ripe; whereas those that were limed remained perfectly green, until late in the fall, and the fruit borne by them was magnificent. At any time during the excessive heat in August of that year, a person might moisten his hands by placing them, for an instant under the small heaps of lime surrounding the trees.

Professor Schubler, of Germany, found that 1000 parts of lime, dried in a temperature of 212 deg., gained by exposure for three hours to air saturated with moisture, at a temperature of 60 deg., 11 parts; in 12 hours 26 parts; in 24 hours 31 parts; in 48 hours 35 parts; when it appeared to have become saturated with moisture; for in 72 hours it had not again increased in weight. The nature of lime was first demonstrated by Davy, in 1807; he showed that, like the other alkalies, it was a metallic oxide. The metallic base of lime he termed calcium; its equivalent is so, and lime being a compound of one atom of calcium and one of oxygen, is represented by the equivalent number 28; and hydrate of lime by 28 lime + 9 water = 37. The salts of lime are obtained by dissolving carbonate of lime in the respective acids; several of them exist native. Sul-

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phate of lime, selenite, or gypsum is an abundant natural product, and may be formed artificially, by adding sulphuric acid to the solutions of the salts of lime.

Farmers should be very particular in the selection of their lime for agricultural purposes. I speak from experience in this matter; having sown within the last seven years, more than 10,000 bushels, 3,000 of which were stone lime, and the balance oyster shell. The stone lime was obtained on the banks of the Hudson, and contained, as most limes do, a large per centage of magnesia. By its use, I am convinced my land was injured, and it may require several years to recover from the bad effects produced; the fact is, all lands require magnesia in minute quantities to grow the usually cultivated grains; and all lands contain a sufficient quantity for agricultural purposes; therefore, by adding lime containing a large per centage of this substance you add a mineral not required, and consequently, take up the space that should be occupied by some more useful ingredient. I would not condemn all the stone lime found on the banks of the Hudson, as I have examined but few of them; those few however, have all been strongly impregnated with magnesia. Statuary marble is the only perfectly pure carbonate of lime, or rather if not perfectly pure, more nearly so than any other stone lime. In examining lime stones, place them in strong acid, and if they do not effervesce very rapidly, and yet are so hard as to enable you to mark glass with small pointed pieces, you may be assured they contain flint earth, and possibly clay. If the lime is not sufficiently hard to scratch glass, and on effervesing with acids the action is very slow, and the solution resembles cream, you may make up your mind that it contains magnesia. When the lime stone appears brown or yellowish red, it contains iron.

The chemical effect of burning stone lime is, that the water and carbonic acid gas are driven off, which amounts to about 35 per cent. After having been exposed to the atmosphere on your farms for a certain length of time, the carbonic acid of the air is again absorbed by the lime, which reduces it to the state of chalk, or carbonate; if taken up by plants before it becomes a carbonate, the charcoal and oxygen abounding in all plants, immediately converts it into one. Caustic lime applied to your soil, reduces hard vegetable matter into a state easy of decomposition. When the lime takes the chalk form, it furnishes matter requisite to supply the inorganic structure to plants which grow in its vicinity. You may always lime land advantageously which abounds in hard, dry, undecomposed

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roots, sods, muck, or dry fibres, and use upon such, caustic lime. As all soils are benefitted by mild lime, you can scarcely ever go amiss in its application upon any species of land, as every crop you grow upon it requires, and will rapidly lessen the quantity of lime in the soil. Nitrate of lime is produced in the soil by lime, as it decomposes the earth, rendering it sufficiently soluble to enter the roots of plants. Alkalies and earths can never enter the plants in a pure state, as before stated. Four years since, I manured a fifteen acre lot with oyster shell lime, using 300 bushels to the acre, on a sandy loam that would not grow any thing more valuable than a well known pernicious weed, called St. Johnswort. That year the wheat that grew upon it, weighed 64 pounds to the bushel. I seeded the lot with one bushel of clover seed, and half a bushel of timothy seed to the acre; and the first year after, cut two and a half tons of hay; and the second year three tons per acre. To a heavy tenacious clay, I would not hesitate to use 600 bushels per acre. The chemical action of the lime on such land, is to render it friable, easily worked, less liable to injury by the powerful rays of the summer sun, permeable to atmospheric influences, and easily acted upon by showers. It deprives all injurious insects in the soil, of life, decomposes them, and enriches the soil with their remains.

I was informed in Edinburgh, Scotland, by a highly educated gentleman, that many farmers in his neighborhood were accustomed to use from 500 to 1,000 bushels of slaked lime per acre; he further said that there were farmers owning peat moss farms in the north of England, and likewise in parts of Ireland, who had used eleven and twelve hundred bushels per acre. They occasionally used, with very good effect, salt with their lime. I saw a farmer living on the domain of the Duke of Buccleugh, near the borders of England, sowing lime, in which he said he had put about six bushels of salt per acre; he was sowing at the rate of 400 bushels. The year previous, by the application of lime and salt, he had produced 3¾ tons of hay to the acre, when the contiguous lot had only yielded two tons. (For the last five years, I have always used a small quantity of salt in all my compositions for grain, grass, and root crops, taking the idea from the Scotch farmer. I invariably soak my cereal grains in a strong salt brine before planting, and have on two occasions used scalding hot brine upon wheat, with great success. The effect was, to swell the grain to a size that it could not attain in the earth under ordinary circumstances, in three weeks. The aquapine was in many cases plainly discernable.)

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In potato culture, lime I believe to be a sovereign remedy if properly applied, against the evil effects of insects, which cause, as I believe, the rot now so prevalent throughout the world; the tops of potatoes contain a very large per centage of lime, consequently it is indispensable to its growth. Place lime upon a heap of potatoes the majority of which are half decayed, and you will find decay in the balance will immediately cease.

I have sown lime at the rate of 200 bushels per acre, upon half of a ten acre field of wheat, and left the balance unlimed. The consequence was, the unlimed was *entirely* destroyed by weevil and rust, when the limed portion produced fifty bushels to the acre of wheat, weighing 64½ pounds to the bushel. I have seen the same effect produced in oat, rye, corn, potato, and buckwheat fields.

When you find a field does not produce a crop equal to your anticipations, in nine cases out of ten, an applitation of 200 bushels of oyster shell lime to the acre, at a cost of $12, will produce capital crops for six years afterwards; at the expiration of which time, if the ground is not plowed deep during the interim, you will find at the depth of 11 or 12 inches a complete level floor of lime, which gradually finds its way to the subsoil, where it forms a level surface and remains until brought up by deep plowing; it will then benefit your soil for another term of years, in the form of chalk, its action as caustic lime then being a solvent, having ceased.

Abroad, chalk is more used for agricultural purposes, than any other lime stone species; it is composed of flint, clay, oxide of iron, carbonate of lime and water. Lime is therefore one-half more profitable as a manure than chalk; for the reason that it dissolves hard substances, and fits them for the food of plants, before it again absorbs carbonic acid gas in sufficient quantity to become as chalk. There is one question I have to ask of the learned men, which is this, how do plants take up in their system carbonate of lime, which is known to be an insoluble substance, and yet in all plants and vegetables carbonate of lime is found to exist. It can only be, I think, by attracting a large volume of carbonic acid from the atmosphere, which becomes a bi-carbonate, and in this state is alone soluble and capable of being taken up by plants.

I have been informed by a scientific agriculturist, Mr. Wilkins, who has an extensive rice plantation in South Carolina, that a portion of his plantation was considered by his manager, as unfit for rice cultivation, or in fact any other. He advised that it should be

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thrown out, rather than lose the time requisite to reclaim it. Mr. W. thought otherwise, and determined to lime it, although the land was exceedingly wet. Mr. W. ordered the lime to be carried on in baskets. It was spread over the field and hoed in, the rice was then sown and cultivated in the usual manner. The result was fifty-six bushels of rice per acre, a larger yield than was usually obtained on any other part of the domain. That piece of land contained all the chemical requisites, eleven in number, except lime; the consequence was no crop could be grown upon it, and it was considered barren; whereas, by the application of perhaps $2 worth of lime per acre, it was rendered highly fertile, and capable of yielding a fine crop of rice; proving what I have repeatedly asserted, that if one of the eleven chemical substances contained in all cultivated crops, be entirely absent from a soil, that soil is incapable of producing those crops, and to all intents and purposes is a barren soil.

Thousands of acres of choice land are now deserted in the Southern States, and hundreds in our own State, which might probably by the application of lime alone, be made to yield 50 bushels of wheat to the acre. I mention lime particularly, because it is used by all plants in larger quantities than either of the other chemical ingredients, and consequently the soil is deprived first of it.

Sulphate of lime is another most important manure, and especially beneficial to grass crops, for the reason that it adds to the soil one of the indispensable eleven, viz: sulphuric acid, which is just as necessary to the growth of plants as lime, and without which no crop can possibly grow. It consists of

Sulphuric acid,----------	32 parts	in 100
Lime,----------	30	do
Water, ----------	33	do

Liebig says, that 100 pounds of gypsum, or sulphate of lime, give as much ammonia to the soil as 6,250 pounds of horse urine would yield to it; four pounds of gypsum, he affirms, increase the produce of the meadow 100 pounds. The decomposition of gypsum is very slow, and consequently its action lasts many years in the soil. Although sulphuric acid is required by nearly all plants, still it is only required in small quantities; therefore, when a man spreads a quantity of plaster over his fields, the effects last for several years. I have frequently heard farmers say, that they did not consider plaster of any service, except the first year, when the results were great, that they had continued to put it on in quantities, year after year,

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without perceiving any superiority in growth over the first year, and that they had determined not to use any more of it. Now, the fact is, if they used 500 pounds to the acre, a sufficient quantity of sulphuric acid was added to the soil, to last any crop you could put on the land for four years, and consequently any additional quantity was superfluous and perhaps hurtful.

If you cannot readily obtain plaster, no better substitute can be found than anthracite coal ashes; they contain ten per cent of sulphate of lime, ten per cent of lime and sand, together with oxide of iron, alumina, azote, silica, magnesia, oxide of manganese, sulphuret of iron, and alkaline salts. Sixty bushels of coal ashes per acre would be equal to six bushels of plaster, (as far as sulphuric acid is concerned), for grasses. I can assure you there is no manure that I have tried, the effects of which are more immediate and certain than coal ashes on certain soils. Last summer I experimented with it upon clover and timothy grass, and likewise upon trees, with great success, and recommend its use to all.

The proper plan for young farmers would be, when they purchase a farm, to become acquainted with the properties of the soil by analysis. They should understand analysis themselves, to some degree, if not, for $20 they may have their soils analysed, instead of proceeding in the dark, wasting manure, seed and time, they will know precisely the substance deficient, and by applying it, will frequently produce great results at a small cost.

Next to lime, the substance most probably absent in all cultivated soils, will be bone earth. By all the analysis recently made, bone earth and potash are found in less quantities than any other substance, except perhaps lime. They are both indispensable to all crops; I would therefore advise the frequent use of bone dust, lime and ashes, upon all soils that have been long under cultivation.

It is the want of these three substances, particularly, that has rendered the soils of all our old States once so fertile, and almost inexhaustable in the estimation of the first settlers, now barren wastes. The old countries, too, may be held up as examples; the island of Sicily once the granary of Southern Europe, now imports its breadstuffs; the soil of Italy, in the neighborhood of Rome, once affording food for hundreds of thousands, is now sterile. Such will be the case in the whole of Europe as well as in this country, if the present system of arranging drains in all the large cities, to carry millions of dollars worth of the most fertilizing and enriching manures into the

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ocean, is not stopped. If we take from our soils annually, all its productions, and return nothing to it, exhaustion will of course be the consequence.

If you find your soil contains, on washing, any acid matter, or that it produces sorrel in abundance, which indicates acid, an application of caustic lime will be very beneficial, as it will immdeiately combine with the acid and neutralize it, and thus at once remove it; although at first it will probably injure the grass, or the crops you may have on the soil, still the benefit will be very great. Sometimes the soil may contain copperas, which will render it unfit for agricultural productions, although it may contain all the requisites of growth; if such is found to be the case, an application of caustic lime will decompose the sulphate, and render the land fit for tillage.

If you find, on the other hand, that your land contains an excess of lime, you may if it be a clay soil, overcome the lime by an application of sand; and if it be a sandy soil, an application of clay will have the desired effect. If the sandy soil is excessively light, and is carried about by the force of the wind, which not unfrequently is the case, peat or muck might be applied, with immense advantage; it would consolidate the soil, prevent the ill effects of the wind, render it at once fertile, and if the muck should be applied in sufficient quantity, permanently so.

If your soil contains too small a quantity of vegetable substance to grow good crops, it may with all ease be supplied by the usual manures; if too large a quantity, the excess may be removed thus: plow the land north and south for instance, then east and west, by so doing you will cut the sods into squares, they must be drawn into heaps and burnt; the vegetable matter contained in them is left calcined with the earth in the form of ashes, in which shape it must be spread over the field; inorganic and saline matters will be by it yielded to the seeds afterwards sown; an application of lime plowed under, will exterminate by decomposition the roots of weeds, wild grass, &c., not reached by the plow, and the whole field will become remarkably fertile, and capable of yielding any vegetable production.

I had a field of this description on my farm, which for several years was a perfect eye sore to me, it abounded with superflous water, was covered by a rank growth of wild grass and bogs, stones and roots were abundant. It was supposed by all who saw it, that the field could not be reclaimed. I determined to drain it, and for that purpose, formed an irregular shaped space in the lowest portion of the field, to re-

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tain the water, by carting some hundreds of loads of muck from it to a heap hard by; I then commenced ditching from it as the centre to all parts of the field, the stones were made use of for that purpose; and when completed there were under drains, built of stones in the most approved manner, leading to all parts of the land, the field containing about four acres; the advantages were, 1st. The ground was perfectly drained, and yielded the first season after, potatoes, corn, and buckwheat. 2d. A pond was formed 14 feet deep and 600 feet long which is now stocked with trout, perch, carp, and gold fish. 3d. The muck taken out, mixed with oyster shell lime, was worth the entire cost of the improvement, as manure. In the spring I intend to draw upon this field six hundred bushels of unslaked lime in the manner following: I will deposit it in small heaps of five bushels each throughout the field at reasonable distances apart, when the heaps become sufficiently slaked to reduce the lime to powder, it shall be spread equally over the land, and immediately plowed until it becomes thoroughly incorporated with the earth; this field will then produce an abundant crop of any kind of grain that may be sown upon it, and will be permanently fertile, as the humus in such a soil is very abundant. A few years since I placed a quantity of lime on a corner of this same field, which was then cold and wet; I could see no improvement in that portion over any other part of the field, and came to the conclusion that generally speaking, lime was of no service on a wet soil; still Mr. Wilkins was eminently successful on such a soil, obtaining 56 bushels of rice per acre, where rice never grew before; circumstances and climate, might have had some effect. Lime is apt to liberate gases, and other volatile substances contained in a soil, therefore it would not be advisable to pursue a course of liming for many years in succession, as you might destroy a good soil by so doing. On ordinary tillable land, an application of three hundred bushels per acre, would be sufficient to last 20 years. I have heard farmers on the Hudson remark, that lime was valueless for agricultural purposes, and injurious to their farms; the reason was, that the calcined magnesia of the lime stone remained for a long period of time after its application, in a caustic state, unfit to absord carbonic acid gas from the air, and in this state nothing can possibly be more disadvantageous to all growing vegetables and plants. After remaining a long time in the soil, it finally absorbs the carbonic acid gas of the atmosphere, when it becomes carbonate of magnesia, and in this form is particularly valuable as forming a part of plants; all very fertile soils contain it.

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You will find a composition consisting of one part salt, and two lime, for almost every crop, a capital manure. I have used it successfully upon wheat, rye, oats, potatoes and various other crops. Where salt is used you will find no grubs or other injurious insects; weeds will be killed by it. I have destroyed Canada thistles by cutting them down in August, and applying lime and salt to the tops of the principal stems. You may apply to some soils, in inland situations, 20 bushels of salt to the acre with marked success In England the farmers using lime and salt together, usually after it is mixed, let it lay in a heap for two or three months, covered with straw or sods, before they use it; in order that by slow decomposition, muriate of lime and soda may be formed together with alkali; the muriate of lime is one of the most absorbing substances known; before this decomposition takes place, it would not be well to use the combination, as it may be hurtful. I have used salt and soot; salt and Jersey blue sand; salt and muck; and salt with pond mud to great advantage on the cereal grains. And I have injured apricots, apples, cherries, plums and peaches by the use of salt around their roots in too large quantities. Place a bushel of salt around a good sized cherry tree, and the following year the fruit will all taste salt.

Shells unburnt I think make an excellent manure, for the reason that they contain carbonate of lime, phosphate of lime and animal matter, together with soluble gelatine and aluminous, membranous or cartilaginous residue, much of which is of course destroyed by burning; they should be placed upon a stone floor and crushed by means of an iron or granite garden roller, and when they become a palpable powder, the dust should be sown in the drills with the seed. I have used it to great advantage in carrot and beet culture, for the reason that it was sown with the seed, consequently all the volatile and valuable earthy matters were immediately decomposed, and being in close contact with the seeds, were readily absorbed by the plants as they grew. The contiguous rows of carrots, and beets, five in number, were manured with oyster shell lime in a mild form, and an equal quantity used; those however sown with the pure oyster shells crushed, produced much the finest roots; in an equal number of rows of potatoes, I observed the same difference, in favor of the shells unburnt. Any quantity of shells might be obtained in the city of New-York, at a cheap rate. If placed whole in your borders for grapes, they will be of great advantage to them, or in your barn yards under the manure, they will decompose gradually, and enhance the value of the compost.

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Mr. Blaikie, in a letter to Sir John Sinclair, dated September 18, 1818, says, " oyster shells pounded or bruised (without having been burned) were first used upon Mr. Coke's farm as a manure in the year 1816. In the summer of that year, the experiment was tried upon a hungry, light, sandy soil, which had been cleaned for turnips. The oyster shell dust or powder, was drilled, in the usual way, upon 27 inch ridges, at the rate of forty bushels per acre, (without any other manure,) was slighly covered with earth, and the turnip seed sown upon it."

" Another part of the same field, quality of land equal, was manured with farm yard dung, at the rate of eight tons per acre, put into the same sized ridges, and sown with turnip seed as before described, no manure having been applied. The turnips proved a good crop on both pieces; nor was there any perceptible difference in the bulk, but the produce was not weighed, therefore no fair conclusion can be formed; the manure used gave nourishment to the turnips, and the lime excited the nutritive substance in the soil, which likewise imparted nourishment to them."

In 1845, I was walking with a gentleman over his farm, and he remarked to me, that a certain field containing about 25 acres, had been manured frequently with stable manure, and to prove what he said he turned up the soil in many places, showing that manure prevailed in large quantities; still, said he, this field does not produce me more than one ton of hay to the acre, and that well mixed with weeds. I asked him when it had been limed, and his answer was, never to his knowledge. I urged him to lime it at the rate of 200 bushels to the acre, which he did, and the result was, the following year a very large burthen of hay, consisting of white clover and timothy. White clover appears to be indigenous to all soils, if the proper manure is present to induce its growth, It is a remarkable and well attested fact, that white clover always comes in the first year after wild lands are cleared in our Western States. No matter how remote they may be from civilization. I am convinced if our western farmers could obtain shell lime, and apply it to their lands, now rich in vegetable humus, they would obtain sixty bushels of wheat per acre where they now raise but thirty, for the reason that they depend upon the decay of their wood for the formation of the necessary humus; which when formed, absorbs over seventy times its weight of ammonia and slowly yields carbonic acid, which is absorbed and decomposed by the leaves of the wheat, and likewise nitrogen, which is mechanically conveyed to the roots. The effect of lime

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would be to decompose the matters rapidly, and render them immediately fit for the elaboration of the wheat plant; consequently the growth would be quick, the season short, and the yield doubled.

Its action would be most powerful on the organic matter, which must be in immense masses in an undecomposed state in their rich soils, and upon the obnoxious rooted fibrous plants, weeds, seeds and innumerable insects, all of which would be dissolved and transformed into valuable mould; many of their lands are sour, which evil would likewise be at once corrected. The rich alluvial lands would be made mellow by the fermentation which the lime would produce, and all the inert matter would become nutritive.

The first effect of caustic lime is to decompose all animal matter and vegetable substances, accelerating their power to afford nutriment to growing plants, and neutralizing all the acids which have combined with the humus. The same effect is produced upon poor soils; the action is so powerful that it at once exhausts the land, and is consequently prejudicial to it in a great degree. It is very injurious to the health of laboring men, who are employed to spread it; they should always work on the windward side of their wagons. The feet of farm horses used to draw it upon the land in a caustic state, should not come in contact with water; if they do, the flesh will corrode, and the animal becomes incurably lame; the dust of the lime should be kept from their bodies by means of summer blankets. If by accident your men or horses become burnt by the lime, wash the part with sour milk, and it will cause the irritation to disperse. After the lime has been spread a week, it will have no effect upon the animals or men working among it, as by that time it will become carbonate of lime.

I have found by careful experiments, that lime in a caustic or slaked condition, has no negative power, having often failed to grow various plants and seeds in pots filled with lime. When well watered, I found they would start, and grow feebly for a few days, and then die.

You may be assured that no two men will find lime equally useful to their different soils; to some it will be permanently beneficial, to others partially so, and to others still, inconceivably detrimental, for the reason that different soils contain different properties, and different limes unlike qualities. You must first ascertain the properties of your land; you will then be enabled to judge whether it requires lime or not, and if it does, investigate the constituent parts of the lime before you use it.

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It is deeply to be regretted that chemists have not made their investigations more accurate respecting lime, and its mode of action, so that the agriculturists might be enabled to judge with certainty its power and its action upon certain kinds of soils. Much money that has been uselessly expended, besides infinite labor thrown away, might all have been saved to the farmer, had chemists devoted more time and attention to this all important subject, and the results would not have been, as they generally are now most contradictory; without scientific analysis, not only of the soil, but the lime, we may err greatly in its use, and cannot proceed too cautiously. Bear in mind that lime actually in itself, contributes only in a limited degree to the growth of plants, as it constitutes but a small portion of their bulk, and that its use is mainly to operate upon the soil and its constituents, decomposing animal and vegetable substances, and rendering them sufficiently soluble by the aid of water to furnish food for plants.

I have used lime advantageously on a light sandy soil, in which there was no vegetable substance for it to act upon; it appeared to operate mechanically, by combining all the fine particles of sand together, giving them the consistence of soil, and attracting from the atmosphere moisture, all of which induced a fine growth of grass; thus adding to it vegetable mould, rendering it tenacious, and sufficiently fertile to favor the germination of a succeeding crop. It is a little singular, that if a small portion of a pasture field be limed, the cattle kept in the field will invariably eat the grass growing upon it in preference to other portions; the lime corrects the acidity, and thereby produces rich palatable herbage, which is much enjoyed by stock.

By the General Report of Scotland, it appears that there, "in the best cultivated counties, lime is now most generally laid on finely pulverized land, while under a fallow, or immediately after being sown with turnips. In the latter case, the lime is uniformly mild; in the former, quick-lime is used, as it is considered beneficial in destroying weeds, and as having a powerful effect upon the fly. On some of their lands, the effect of lime is still conspicuous after the lapse of fifty years. But in whatever manner this most powerful stimulant is applied, the soil should never be afterwards exhausted by a succession of grain-bearing crops, a justly exploded practice, which has reduced some naturally fertile tracts to a state of almost irremediable sterilty."

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Soils have been known in Scotland, which for a long term of years, could only be made to yield poor crops of oats or rye, notwithstanding the richest dung was spread on them; still no other grains came to maturity; yet, after having been judiciously limed, and properly cultivated, all species of cereals ripened perfectly upon them. The same effect was noticed in England, especially in the counties of Derbyshire, Somersetshire, and Herefordshire. After applying lime upon arable land, I think it should be plowed at least four times, and harrowed as often, in order that the lime may be intimately mixed with the soil; its effect will then be the same as yeast to bread, causing immediate fermentation, and consequently rapid increase of vegetable growth. Another good effect obtained by several plowings is, that the ground is immensely benefitted by being exposed to atmospheric influences, absorbing every time it is turned, large quantities of valuable gases, which in its solid unplowed form, enter it slowly, besides becoming sufficiently pulverized to enable the roots to extend themselves readily for food, which they always take up at the extremities of their spongioles. In the use of lime I am governed by the following rules.

1st. Never to use any stone lime containing magnesia.

2d. Never to use caustic lime upon dry, sandy upland.

3d. Never to use lime of any description upon undrained land.

4th. When applied after seeding, always to put it on in summer, when the weather is dry, in a palpable powder, and plow it under as often and as shallow as possible, mixing it thoroughly with the surface soil.

5th. When caustic, plow it under at once, in order that it may slake in the soil, instead of on the surface, by which many of its valuable properties are lost in the atmosphere.

6th. To place large quantities of caustic lime upon lands overgrown with noxious weeds, coarse useless herbage, wild grass, and obnoxious bogs; all of which it immediately decomposes, and converts into valuable humus, readily soluble in water.

I trust gentlemen, that although I have said much in favor of lime, you will not use it upon your lands without first discovering whether they require lime or not, as lands have been, and may again be materially injured, and I may say, almost destroyed by an injudicious use of caustic lime. Every application reduces the organic

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remains in your soils. I met with a farmer in the north of England, who informed me that he had absolutely destroyed an extensive farm by using lime in excessive quantities; his first application being large, produced wonderful results, with which he was so much pleased that he made another still larger, which to his surprise lessened materially the crop. Not attributing the decrease to the lime, but to the season; he made a third, and entirely destroyed the fertility of his farm. *He* considered lime a manure alone, whereas it should be known mainly as a stimulant, and must be used to promote the fertility of a soil permanently. When once applied, it remains in the land until removed by the crops; therefore, when found necessary, make a liberal contribution to the soil, and be satisfied with the results.

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LEATHER.

By Charles Leupp, New-York.

This great branch of domestic industry, ranking in value and extent with those of cotton, wool, and iron, claims a high position among the manufactures of the State of New-York. Our commercial metropolis imports and distributes a greater number of foreign hides than any other city in the United States, and a larger number of *sole leather* or heavy hides, than any other city in the world; while our inexhaustible forests of hemlock, abundance of water power and facilities of transportation, secure us advantages beyond those of any other State in the union.

It is only within the last thirty years that New-York has become the manufacturer of sole leather for other states and countries. Previously, and indeed subsequent to 1845, we were mainly supplied with oak leather from the States of Pennsylvania, Delaware and Maryland; while Massachusetts and Vermont, furnished us with hemlock leather. Comparatively little leather of oak tannage is manufactured in this State, owing to the scarcity of oak bark, and its inferior strength for tanning purposes. We still continue to receive the principal part of our oak leather from the southern and western States, where the oak tree is found growing in greater quantities and strength.

In regard to hides. While our imports of foreign, chiefly from South America, do not on an average exhibit much falling off, (the average of the past ten years being 692,000 annually,) our domestic hides have increased largely. The prairies of the west seem capable of growing cattle almost as abundantly as the campagnas of South America, and the tanneries of the western States, and north-western part of the State of New-York, which formerly drew their supplies of foreign hides from the city of New-York, are now almost exclusively stocked with hides, the produce of the countries bordering on the lakes. Canada, which in past years derived large supplies of leather from this city and State, now receives only her stocks of for-

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eign hides from here; while by duties which are in effect prohibitory, and with the advantage of a draw-back of five per cent on foreign hides imported through the States, she is enabled to supply herself with leather from her own tanneries cheaper than we can furnish it.

Since the removal of duties on leather in England, considerable shipments of oak and hemlock leather have been made to that country; but owing to the fact of its being a new article, with the quality of which the consumers there were unacquainted, it met with but partial favor and dull sale. The system of economy so rigidly carried out there, demands that we should prepare our leather to suit their wants and prejudices. Instead of being shaped in sides with the head and offal attached, they prefer it in *butts*, in other words, the hide so trimmed as to be free from head, shanks, and other less valuable parts, which are used for different and inferior purposes. Several parcels have been so prepared, and immediately met with ready sale at remunerating prices, and extensive stocks are now in process of tanning, especially adapted to the English market. Our superior natural advantages in the cheapness of hides, bark, and facilities of tanning, render it certain that we shall supply that country with leather. The difference in the cost of bark alone, is as five to thirty, and bark constitutes one third of the cost of tanning in this country, and much more than that in Europe.

The opening of this business to us, in England, will act as a powerful stimulus to our tanners to excel in their trade; for although improvements in quality, and economy in the art of tanning have been steadily advancing, we have not made that rapid progress which ought to have resulted from our natural advantages. The mass of consumers in this country prefer an inferior article at a low price, rather than a good article at a high price; in other words, they will wear out two pairs of poor shoes in preference to one pair of good ones, notwithstanding the latter may be intrinsically the most lasting and serviceable. In England, the reverse of this is the case. There, consumers will wear the best and most durable, because they are in fact the cheapest.

The display of leather at the last Annual Fair, was unquestionably the best yet exhibited, and nearly all the articles shown, challenge competition with the like manufactures of any country in Europe. The French have heretofore excelled in the manufacture of calf skins, mainly in one or two particulars, toughness and mellow-

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ness being the chief. Those exhibited at the fair, rival the French skins in both these respects; and in fineness of finish, excel them. Our bark tanned sheep skins are decidedly superior, both in beauty and intrinsic excellence. In japaned leather, the Germans and French still maintain their supremacy, but we are confident they must speedily yield it.

We deem it proper before closing these remarks, to allude to two specimens of band leather, each of like excellence, and both superior in every particular to any used in Europe. Indeed we know of applications from England for this very article, but owing to the fact of there being a heavy duty on "articles of leather cut into strips," which band leather is, we have not been able to introduce it there to any extent. We anticipate however, that it will find a market there before long, and to the mutual advantage of both countries.

We annex a table, showing the quantity and value of sole leather inspected in the city of New-York, from 1827 to 1846, inclusive. The quantity is taken from the returns of the State Inspectors, and the value is determined by estimating the weight and price, assuming as a basis, the average weight and price realized by one of the most extensive houses in that branch of business in the city of New-York.

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TABLE

Showing the quantity and value of Sole Leather inspected in the city of New-York, from 1827 to 1846, inclusive.

Year.	No. of sides.	Av. weight of side.	Total No. of pounds.	Average price.	Value.
1827	265,353	13	3,449,589	$18 55	$639,898 75
1828	284,978	13¼	3,775,958	19 61	740,465 36
1829	264,878	14¼	3,774,511	19 61	740,181 60
1830	326,297	16	5,220,768	19 61	1,023,792 60
1831	440,000	15⅞	6,930,000	20 67	1,432,431 00
1832	667,000	14¼	9,504,750	18 28	1,737,468.30
1833	882,609	15	13,239,135	16 69	2,209,611 63
1834	828,175	15⅞	13,043,756	14 57	1,900,475 24
1835	784,165	16	12,546,640	15 63	1,961,039 83
1836	925,014	16	14,800,224	18 28	2,705,480 94
1837	890,962	15	13,364,430	16 96	2,266,607 32
1838	749,556	15⅛	11,393,251	18 02	2,053,063 83
1839	772,255	15⅓	11,841,243	19 25	2,279,439 28
1840	638,112	15¾	10,050,264	17 22	1,730,655 46

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TABLE.—(CONTINUED.)

Year.	No. of sides.	Av. weight of side.	Total No. of pounds.	Average price.	Value.
1841	687,101	17	11,680,717	17 66	2,062,814 62
1842	886,868	17	15,076,756	15 00	2,261,513 40
1843	867,210	17¼	15,176,175	14 46	2,194,474 90
1844	1,048,770	16 9/16	17,724,213	14 38	2,548,741 82
1845	1,037,500	17½	18,156,250	13 01	2,362,128 12
1846	1,074,256	16 9/16	18,047,500	12 00	2,165,700 00
	14,321,060		228,796,130		$37,015,984 00

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ERRATA.

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Some errors have escaped correction, chiefly typographical—the annexed require notice.

Page 24 read "Callanan," instead of "Callemar."

Page 24, read "Siclen," instead of "Sickler."

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Victoria Institute Trs. 316 & fig.
Haldeman on Aquilus. 374 "

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